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UNITED KINGDOM

Projected Level of Demand, Supply, and Imports of Farm Products in 1965 and 1975

Economic Research Service
Foreign Agricultural Service
U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C.

ERS-Foreign-19

UNITED KINGDOM: PROJECTED LEVEL OF DEMAND, SUPPLY AND IMPORTS OF FARM PRODUCTS IN 1965 and 1975

This report was prepared for the Economic Research Service and the Foreign Agricultural Service of the United States Department of Agriculture under contract with the Institute for Research in Agricultural Economics of Oxford University, Oxford, England. It is an independent study, and is being published in the form in which it was submitted. The views expressed herein are those of the Institute and do not necessarily reflect those of the United States Department of Agriculture.

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January 1962

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UNITED KINGDOM: PROJECTED LEVEL OF DEMAND, SUPPLY AND IMPORTS OF FARM PRODUCTS IN 1965 AND 1975

Introduction to the Preparation of Consistent Projections of Supply and Demand

Forecasting the consumption and supplies of agricultural products in the U.K. can be considered in three main sections. First there is the home production, next the level of foreign supplies and finally the level of demand by consumers. It is not possible to prepare forecasts of any of these quantities independently of the other two. Demand may have logical precedence over the supplies, but it is clear that what is not available cannot be consumed, and that consumers can and do adjust their consumption patterns to the supplies. Price still plays a major part in the reconciliation of supply and demand. To a certain extent, however, the work of forecasting can be conducted in these three sections as if they were separate. The supplies of home produce which could be expected in 1965 and 1975 if the price situation were similar can be estimated. In like manner estimates can be prepared of the supply of imports that would be available in 1965 and 1975 if the price situation in the U.K. remained similar; but other changes in the price, demand and supply on the world markets which are expected should be allowed for at this stage. Also forecasts of demand at constant prices can be made, allowing for changes in income, population and other important factors that are independent of the price situation. When these three estimates have been made a discrepancy between supply and demand will emerge which will probably need to be eliminated if the forecasts are to be acceptable as forecasts of what is actually going to happen. It is true that for some products a considerable discrepancy between supply and demand can be met for quite a long time by the adjustment of stocks: but for most agricultural products considered here stocks are not important over periods as long as five years; the forecasts themselves should be understood as estimates for the 1963-7 period rather than 1965 and the 1973-7 period rather than 1975, and will be based on the period 1955-9. For all final forecasts the results will appear as if they were in perfect balance. The contribution made by home supply, foreign supply and demand in eliminating the initial discrepancy will depend upon their elasticity of response to price. The response of foreign supply to price is expected to be relatively greater than the response of either home supply or demand. If it were so large as to overshadow the effect of the other two we would be in a position where the discrepancy would be entirely eliminated by adjustment of imports which could then be treated as a residual item. In the case of many products like tea, coffee, cocoa, dried fruit, this line will in fact be taken: home supplies do not enter into the picture, and demand is very much less responsive to price than imported supplies are.

The major part of the forecasting must be involved with the market for food. This market consists of several groups of products all more or less closely related on the supply side as well as the demand side. For convenience they will be split roughly into two groups: one including those commodities where price will play an important role in reconciling demand and supply; the other where the adjustment will all be made on the supply side, either for special reasons concerned with the organization of the market or because supplies are highly elastic. In the second group demand will be forecast at constant prices unless there are special and important reasons for supposing that the price level will drop owing to lower production costs or conditions on the world market and that this fall in price will be sufficient to have an important effect on demand. Generally speaking we drew the line at trying to forecast price movements for commodities that were entirely imported in this group. But the relevance of the price of grain and other feedingstuffs on the world market was so immediate to the whole problem of home supplies that an estimate of future prices had to be made. It was assumed that the supply of grain to the U.K. will be perfectly elastic; in forecasting, the price of grain on the world market will be one of the major assumptions and alternative forecasts will be prepared corresponding to different assumptions concerning these prices. Nevertheless these price levels are barely relevant to the actual problem of estimating the consumption of grain for food owing to the low elasticity of demand.

In the first group of foodstuffs which covers roughly milk products, meat, fish, vegetables and fruit (where the discrepancies between supply and demand are expected to be eliminated by movements in price) the estimates of the final consumption and the changes in price necessary to produce them will be made. The process of estimation will be more complicated than in the second group. In the majority of cases the secondary disturbances due to changes in price in the first group on consumption in the second group of foodstuffs will be ignored.

The third group of agricultural products contains those not used for foods. This mainly concerns those used for fibres, tobacco, industrial oils, brewing and distilling. So far as is possible the estimates in this section will be kept separate from the estimates of the consumption of food; inevitable interrelationships on the supply side will be introduced at convenient stages. But every effort has been made to isolate this part of the work from the main stream which is concerned with supplies for food.

The main background to the forecasts concerns the movements of population and income which can be expected; these affect the demand for agricultural products within the U.K. The changes of income and population outside the U.K. also have considerable bearing on the supply and price of imported commodities. These movements of income and population will be considered as exogenous - that is to say, they will be considered as independent of the forecasts that we make.

The other main element of the background to these forecasts is the policy of the government towards agriculture and trade. This policy cannot be regarded as exogenous in the same sense that the movements in population can be considered as exogenous (there are no fixed targets of production, no fixed optimum prices). This does not mean that we consider the forecasts that we make are likely to have a major impact upon government policy; but that the policy itself is not independent of the state of supply and demand. There are two main grounds for supporting agriculture: first, support of the incomes of farmers (and those engaged in industries in close association with agriculture) which requires the maximum assistance when prices are low; second, the protection of the balance of payments position, and the prevention of high food prices and scarcity. This consideration naturally becomes more important when prices of agricultural products are high; and it often appears that the agricultural industry gets more support when it is doing well than when it is doing badly. It will be assumed for the purpose of these forecasts that the present method of supporting agriculture remains unchanged in its general structure. No attempt will be made to estimate the effect of adopting the protection system of the Common Market which would involve higher food prices to consumers; or the effect of adopting any drastic changes in the method of allocation of the deficiency payments which are fundamental to the present policy. There do however appear to be two ways in which the government will try to change these deficiency payments: first to reduce the overall amount and second to distribute them more evenly among the products. Both these objectives are often impossible to achieve in the short run, but a target rate of subsidy as a percentage of the value of each product will be assumed to be the long run objective. In the actual forecasts they will be assumed to have been achieved. In achieving these target rates of subsidy the government is committed to some rather nebulous obligations under the 1947 Agriculture Act and some more specific obligations under the 1957 Agriculture Act which limit the rate at which the standard price level for commodities can vary individually and in total. The effect of changes in the price of inputs is taken into account in determining the standard prices in general, and the price of feedingstuffs in determining the price of pigs and eggs. More recently a White Paper on Agriculture (December 1960) has indicated that in the long run farmers should expect their incomes to increase provided that the objective of reducing agricultural subsidies is achieved. It was also stated that the $2\frac{1}{2}$ per cent. drop in the value of the guarantees permitted under the 1957 Act should not be regarded as a normal goal of government policy. This almost implies that the real value of farmers' incomes should not fall; and any projection of production and prices which seriously decreases the real value of these incomes seems to be unacceptable in the normal run of events. The forecasts that are made will be consistent with the restrictions of the 1957 Agriculture Act. Furthermore any forecast that shows a very steep increase in the burden of Exchequer payments seems to be unacceptable; and likewise any forecast that leads to increases in the cost of imports of food and feedingstuffs which are both large and avoidable will probably require revision.

The aim in presenting these forecasts is to show a reasonable expectation of a normal state of supply, demand and imports. These forecasts will correspond to an equilibrium between supply and demand which will be consistent with the assumptions made and similar to the long run equilibrium assumed to exist in the writings of the classical economists. The forecasts will be made in this form not because a state of balance is expected in 1965 or 1975 but because the deviations from this state seem to be quite unpredictable. In the case of 1965 we may hazard a guess as to whether supplies of some commodities will be above or below this state of balance. The forecasts of supply and demand will be made on the basis of the years 1955-9. In the field of demand we are inclined to accept the consumption in 1955-9 as normal at 1955-9 prices: it was free from restriction in all but detail. In the field of supply we consider that home supplies were below their long run equilibrium level at 1955-9 prices and a serious attempt will be made to assess what this long run equilibrium level would have been.

I

Provisional Forecasts of Supply, Demand and Imports, and other assumptions used in forecasting *

Forecasts of Demand at Constant Prices

Population

The major factors that are considered to be responsible for movements in demand at constant prices are income and population movements. As the income elasticities for foodstuffs tend to fall the relative importance of population changes in forecasting increases. Unfortunately there is considerable uncertainty about the size of the population even if we are only looking ten or twenty years ahead. The chief source of this uncertainty is the expected number of births. Concerning the death rate there is fairly general agreement that it will continue to fall for comparable age groups. Each year the Registrar General's and the Government Actuary's departments publish forecasts of the population at five-yearly intervals. The set of forecasts published in 1960 were used as a base for one set of forecasts of consumption. In these forecasts the mortality, especially in the age groups below 45, was expected to decline, death rates halving over 25 years, while the births over the period relevant to our forecasts were put at 860,000 per annum, with a slight reduction after 1972. The net migration outward was 30,000 per year. The forecasts are given for 1964, 1969, 1974 and 1979 and a weighted average of the first two and the last two populations was used to obtain estimates of the population in 1965 and 1975. Using a rather more refined technique Colin Clark has estimated the population for 1965 and 1975. Mortality rates up to the age of 15 were assumed to halve over 19 years while the fall in the death rate became progressively less rapid for the age groups above 15. Trends in fertility were calculated by cohort fertility analysis. On the basis of these historical trends the total number of children born to women surviving to 49 (the gross fertility rate) was estimated at 2 and the estimate of the number of births for women in various age groups were at first estimated consistently with this total. But the recent increase in the number of births has forced some upward modifications of these forecasts. For 1961 to 1965 the expected number of births was made

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* Tables 1 to 19 relate to this section.

to correspond to a gross fertility rate of 2.34 rather than 2.0 and a figure of 2.1 was taken for the gross fertility rate after 1965. These forecasts are consistent with the belief that the present high level of births is produced by the lowering of the average age of marriage and will fall once the age of marriage has stabilized at a lower level. The migration estimates were 36,000 net outward migration per annum, which is only a little higher than in the official forecasts. The difference between the two population forecasts is very large in 1975, amounting to nearly 2 million, and this difference is concentrated in the younger age groups. In order to show the extent to which our forecasts depend upon these assumptions about population two sets of forecasts were made - one based on the Registrar General's table published in 1958 and the other on Colin Clark's estimates. By interpolation between these two estimates it should be possible to judge the level of forecasts corresponding to quite a wide range of population estimates, the difference between the two estimates for 1975 being almost sufficient to swallow the present population of Eire.

In Table 1 the population structure associated with these two sets of assumptions is given. The assumption A will throughout the whole system of forecasting correspond to the structure of population forecasts prepared by the Government Actuary in consultation with the Registrar General. The assumption B will correspond to the forecast by Colin Clark. A rather elaborate set of consumption units is also given in Table 1. The basis for the scale of consumer units chosen was common sense and some reference to family budget material, especially the treatment of consumer units by Prais and Houthakker for various food groups. For most foods and for alcoholic drinks there is a considerable advantage in basing forecasts on the consumer units rather than the population in that the range of uncertainty between assumptions A and B is reduced. This is simply because the births about which there is so much uncertainty have a smaller effect on the consumer units. For liquid milk, however, the uncertainty is increased by this treatment. Perhaps the differences in the numbers of consumer units for various foodstuffs appear trifling compared with the general uncertainty associated with forecasting. But it seemed worth making these calculations simply to ensure that the differences were trifling; and, having made them, it was only common sense to make use of the results. The consumer units for alcoholic drinks do show substantial differences from the general run of consumer units and can be considered as more certain than the forecasts of the other consumer units.

Income

The size of the national income is of course related to the population forecasts and especially forecasts of the size of the labour force. The most important variable from the point of view of our forecasts is the level of total expenditure per general consumption unit in 1965 and 1975 (these units corresponding to the requirements of consumers for all commodities). The expenditure on food and the quantities of food consumed will be related to this variable.

The number of general consumption units has been calculated in Table 1 assuming that children, adolescents and retired persons are somewhat less important as consumers than adults between 20 and 64. The differences assumed are fairly modest, allowing a rather large part of expenditure on consumer durables to be associated with children. The forecasts of the size of the labour force under assumptions A and B are given in Table 2. These show smaller differences than the forecasts of population or consumer units. They are based simply on fixed proportions of persons employable in various age groups combined with forecasts of the population structure between the ages of 15 and 75. No allowance is made for qualitative differences between age groups and sexes or for the proportion of work that is merely part-time. The data concerning the proportion of men employable (excluding those engaged in full-time education, including those in the armed forces) was taken from a pamphlet, "The Length of Working Life of Males" by the Ministry of Labour and National Service. The data concerning the employment of women was constructed on a cruder basis. It appeared that in the under 18 age group the proportion of women employed was in fact greater than the proportion of men employed. This seems to be due to a rather higher proportion of males engaged in full-time education. After this it seems reasonable to assume a rapid fall in the proportion of women employed up to 30 and a steady proportion from 30 to 50; it seems probable that among unmarried women the proportion employed may fall somewhat from 30 to 50 but that among married women the proportion should increase with reduced domestic responsibilities. After 50 it seemed likely that retirement would be more rapid for women than men. The proportions assumed were roughly consistent with the total employment data for women and data for employment of women under 18 in the base period. From these two sets of proportions a total of the potential labour force can be calculated for 1957 and 1965 and 1975 under assumptions A and B. There is a slight discrepancy between the observed and estimated labour force in 1957 and the estimates for all years were revised to become consistent with the total labour force observed in 1957. The proportion actually unemployed was fairly small and it will be assumed that a similarly low proportion will be unemployed in 1965 and 1975. The gross domestic product was assumed to be dependent upon two factors - the size of the civilian labour force and the rate of increase in productivity. The ratio of gross domestic product to civilian labour force can be taken as the definition of productivity for present purposes. It was decided to exclude the personnel of the armed forces from the definition of the labour force because it was felt that the abolition of conscription would probably help to increase the gross domestic product - possibly without making any substantial difference to the service estimates. A substantial reduction in the size of the armed forces by 1965 is expected. It is difficult to be sure exactly what the target is - in fact the target appears to be somewhat mobile. For the sake of definiteness we have put it at 400,000 and assumed a further fall to 250,000 by 1975 as a result of the disappearance of overseas commitments. Meanwhile there appears to be some chance that the full-time education will increase over and above the automatic increases expected

as a result of a fixed proportion of the 15-19 and the 20-24 age group being engaged in full-time education. The major change is a rise in the school leaving age of a year which is advised by the Crowther Report on Education; and the government have stated their intention to implement this report before 1970. It seems highly unlikely that the school leaving age will be raised before 1965; but it does appear likely that an increasing proportion of children will take advantage of the existing facilities for education beyond 15 before 1965. Hence a further 150,000 has been docked from the 1965 labour force and 620,000 from the 1975 labour force. The effect of the final rise of 1 year in the school leaving age is not quite equivalent to a fifth of the 15-19 labour force because a substantial proportion of 15 year olds are already receiving full-time education. The final estimates show a rise in the expected number of civil employees which is in excess of the expected rise of consumer units in 1965 and about the same in 1975. The burden of the older population does not appear likely to reach serious proportions before 1975. Some criticism may be levied at the simple treatment of our estimates of the labour force in that it appears that there will be an increase in the proportion of young persons and old persons among those employed. Probably those in the 30 to 50 age group would consider their work as relatively more productive. Industry in general will have to adapt its employment pattern to make use of increased supply of old, and presumably more experienced, labour; and young, and presumably more adaptable, labour. It is assumed here that this is done without loss in overall productivity. Next the forecast of a greater labour force does not necessarily mean an increase in the work done. Apart from the assumption of a high level of employment the possibility of a fall in the hours worked per man has to be considered. This is likely to be balanced by a rise in the productivity per hour when and if it occurs. Many recent wage negotiations have been directed towards a shorter working week; but this does not necessarily mean that a reduction of the working week is inevitable. The move appears to be chiefly a method of raising earnings by increasing the wage rate per hour and the proportion of overtime worked, and also to ensure a smoother contraction of the labour force in times of recession without redundancy. To set against these tendencies we might expect the quite substantial loss of working hours through sickness to decrease and that a higher proportion of the older age groups and the women will be looking for part-time work (whether the work will be available for them or not will depend on how well industry responds to the changed structure of the labour market).

The rate of increase in the gross domestic product must depend chiefly on the rate of growth of productivity rather than the actual size of the labour force. Analysis of historical trends has tended to show that we can expect a rate of increase in productivity per man hour of around 1.3 per cent. per annum. This is somewhat below the rate of increase observed in other countries; and it is of course to be hoped that this rate of growth will be exceeded in the period under consideration. The average rate of increase of

1.3 per cent. per annum since before the war was made in conjunction with a rise in the length of the working week and might have been higher if this had not taken place. The rate of growth of productivity in manufacturing industry and (in recent years) in agriculture has been well in excess of this figure, but the improvement in the service industries (which are becoming increasingly important) and in building appears to be less rapid. Whether a higher rate of growth is achieved or not will depend on several factors to which full justice cannot be done here. But it seems likely that one of the major essentials for increasing the overall standard of productivity at a faster rate will be the discovery of new techniques for reducing labour requirements in the service industries. There is also a reasonable expectation that the rate of growth of productivity will depend to a certain extent upon the amount of capital invested. Perhaps it will depend to an even greater extent on the adaptability of labour and management and the effectiveness of current and recent education and other training. Although any increase in education makes a negative contribution to the Gross Domestic Product in the period under review it is likely to increase productivity in the long run. Capital investment can be treated as a definite factor. It seems reasonable that if we assume higher rates of productivity certain extra demands on capital will be made. In order to cover a range of possibilities three different assumptions concerning productivity per head of the labour force were made. First, a compound growth rate of 1.3 per cent per annum, next 2.0 per cent., finally 2.8 per cent. Although we were of the opinion that the 1.3 per cent. rate was very much nearer the truth than the 2.8 per cent. rate it seemed important to include in our forecast the possibility of a rate of growth near to the level expected in official statements. In a speech in 1954 the Chancellor of the Exchequer referred to the probability of our being able to double our standard of living in 25 years. In another speech recently another Chancellor of the Exchequer saw no reason why the Gross National Product should not increase at 3 per cent. per annum. Assuming a steady expansion of the population and a fixed rate of net investment these two opinions are almost identical. They would require a rate of increase of productivity of a little under 3 per cent. for any practical hopes of their being fulfilled. But the implications of such a rate of expansion are clearly relevant to the internal consistency of government policy; a combination of the rather high rates of population and income growth which are expected from official statements will give what we consider to be the maximum demand for food. On present form there is a greater chance that the official population forecast will be met than the official income forecasts. An intermediate rate of growth of productivity of 2 per cent. represents a position of cautious optimism. A set of six forecasts of Gross Domestic Product is made in Table 3 corresponding to the two assumptions A and B relating to population growth and assumptions (a), (b) and (c) covering slow, medium and rapid rates of increase of productivity per head. From these forecasts of Gross Domestic Product we have deducted a suitable quantity of investment; the capital consumption being taken as 10 per cent. of Gross Domestic Product, while the net investment is related to the rate of increase of the Gross Domestic Product. It was assumed that each £1 increase in the Gross Domestic Product would be associated with a £4 increase in capital. This was not intended to mean that a £4 increase

in capital would cause an extra £1 of production (in our view it would produce less than this) nor was it assumed that the capital-output ratio was constant and equal to 4 (it appears to be considerably less than 4). It was assumed that the more rapid rates of increase in productivity would be associated with rather higher capital-output ratios, but that there would be plenty of room left to other factors in explaining the differences in Gross Domestic Product under assumptions (a), (b) and (c). Estimates of the net investment during the periods 1957 to 1965 and 1965 to 1975 were made by simple arithmetic and, by interpolation and extrapolation, estimates of the net investment for 1965 and 1975 were obtained.

In making our forecasts of total consumers' expenditure in the private sector we made the very simple assumption that it moves in proportion to the gross domestic product less the gross investment. In order to support this assumption we must suppose that there is no important change in the terms of trade; nor must there be any difference in the terms of trade corresponding to the assumptions (a), (b) and (c). (There is a prima facie case for supposing that under assumption (c) the terms of trade would be less favourable than under assumption (a), while the balance of payments position might be better; but no attention will be paid to these arguments even if they could be consistent in the long run.) Next the level of invisible income from abroad and the net investment abroad, which have been of a similar order recently, will be assumed to balance. A rise in invisible income will only occur in association with a rise in overseas investment. This assumption is chiefly one of convenience; but has some reasonable backing in that in many cases the invisible income and overseas investment form two sides of one bargain: it seems unlikely that a continual outflow of income will be acceptable to some countries unless it is balanced by an intermittent inflow of capital investment. The existence of capital invested in the past may not appear as sufficient reason for the continuing of interest and other payments currently. The necessary goodwill to maintain the level of invisible earnings may depend upon the continuing of economic aid or investment.

Finally the proportion of the consumption which takes the form of expenditure by public authorities is assumed to be constant at about 20 per cent. of the total. Since a rather larger proportion of services is contained in this public expenditure than in the private consumers' expenditure the public authorities will probably have some difficulty in keeping the figure as low as 20 per cent., economies in the service industries generally being more difficult than economies in manufacturing. Given normal conditions it seems reasonable to assume some fall in the share of defence in the total expenditure even if the absolute cost does not fall, while some increase in the share of education and possibly the health service may occur. We have already assumed some increase in the numbers of children educated, and some considerable increase in the number of old persons will probably increase health service costs. The estimated increases in total consumers' expenditure are only slightly

higher under assumption A than assumption B. The differences between assumptions (a), (b) and (c) are more apparent in 1975 than in 1965. In 1965 the compensating effect of changes assumed in the net investment narrows the range. In Table 1 the cumulative rates of increase from 1957 to 1965 in the total consumers' expenditure per unit are given. For 1957-65 these rates cluster near 2.0 per cent., but for 1965-75 are similar to the assumed rates of increase in productivity.

Six separate forecasts of demand at constant prices will be made corresponding to the three productivity assumptions and the two population assumptions. For assumptions which fall within this lattice it seems reasonable to suppose that corresponding forecasts could be made by interpolation; for instance, if a rate of productivity increase of 1.65 per cent. and a population growth half way between A and B were assumed, then a forecast could be made by averaging Aa and Ab, Ba and Bb. For an assumption outside this lattice - the most probable one is that the productivity will increase by less than 1.3 per cent. per head per annum - a fair estimate of its corresponding forecast could be made by extrapolation for up to half the width of each interval. For instance, a rate of productivity increase of 1.0 per cent. under population B would correspond to a forecast of 1.43 Ba-.43 Bb, etc. For the forecasts of demand at constant prices extrapolation even beyond half an interval width would probable be sufficiently accurate. But for the final forecasts in which the interplay of supply and demand has been allowed for and related to government policy some checks were made that the whole forecast was consistent within the range of this lattice, but not beyond it. For this reason rather than because of any marked non-linearity it seems to be unwise to extrapolate too far.

The Effect of Total Expenditure on Consumption

In considering the effect of the level of total expenditure on the consumption of quantities of foodstuffs we have relied heavily on elasticities in 1958 calculated by the National Food Survey. Some adjustments and modifications of these elasticities have been made in the light of comparisons made with other budget data and they have usually been marked up by about 40 per cent. in order that they be measured with respect to total expenditure rather than declared family income. Some further modification of these elasticities has been made after consideration of time series. An extended discussion of the effect of income on consumption is given in the appendices on budget data and time series. It is probably fairly well established that the income elasticities decline as the income increases. We consider that they decline at least as fast as the proportionate rise in consumption, and probably faster in the case of some commodities.

The basic relation between income and consumption that we have used is a semi-logarithmic one, $Y = a + b \log X$; where Y, for instance, may relate to the consumption of tomatoes per consumer

unit (the scale of units being the same as that given for vegetables) while the X relates to the total expenditure per consumer unit (the scale of units here being the one given for general consumption). This model assumes that equal proportionate changes in income correspond always to the same absolute change in consumption. In the base period we consider that a rise of 1 per cent. in X will give a rise of .65 per cent. in Y. This is in the case of tomatoes; and this assumption is consistent with the view that the elasticity of tomatoes with respect to income is .65. Under the assumption Aa (high population, low productivity) we expect a compound rate of growth of X of 1.81 per cent. per annum up to 1965. This gives a rise in consumption of tomatoes of 1.81 x .65 in the first year and the same increase in subsequent years up to 1965. The increase of Y over its value in 1955-9 is 8 x .65 x 1.81, or 9.41 per cent. The result differs from that which would be obtained from a constant elasticity model because, while in the first year it gives the same result, during a subsequent year (say 1962-3) the consumption increases by .65 x 1.81 per cent. of the consumption in 1955-9, not of the higher consumption expected to prevail in 1962. The calculation not merely takes less time than the calculation using a constant elasticity but it is also more in accord with the known facts concerning the relationships between physical consumption and income. For 1965 to 1975 again under assumption Aa we have a compound rate of growth of X of 1.28 per cent. per annum. The growth rates for consumption are still related to the base period so that we have a further increase of 10 x 1.28 x .65 = 8.32 per cent. in the index of consumption based on 1955-9. (The total rise in Y from 1955-9 to 1975 being 9.41 + 8.32 = 17.73 per cent.) It remains to allow for the rise in the number of consumers up to 1965 and 1975.

In 1965 the consumer units for vegetables are expected to be 3.6 per cent. up on the base period, in 1975 7.7 per cent. up. Hence the total consumption of tomatoes expressed as a percentage of the consumption in the base period is obtained by direct multiplication: 1.036 x 109.41 = 113.85 per cent. for 1965
and 1.077 x 117.73 = 126.80 per cent. for 1975
The observed consumption of fresh tomatoes in 1955-9 was 300 thousand tons; or, more precisely, the commercial supplies moving into consumption are given as 300 thousand tons. Hence the consumption in 1965 and 1975 are given as 340 and 380 thousand tons respectively. In the case of tomatoes there is a further adjustment to make because we thought that the free supplies would fall and that this would cause a slight increase in demand for commercial supplies. This accounts for the rather higher forecasts of consumption at constant prices of 341 and 383 thousand tons given for 1965 and 1975 in Table 5.

In the case of tomatoes we had no reason to suppose that the income effect fell more than in proportion to the rise in consumption. But for some commodities, especially those which could be observed as identifiable commodities in the budget material of many countries, we did think we had enough evidence to support an even steeper rate of fall of the income elasticity. For milk and

milk products, meat, fish and eggs we assumed that the simple rate of increase corresponding to the compound growth of income was 10 per cent. smaller for each 25 per cent. growth of the income level. No modification was made to the procedure outlined for tomatoes up to 1965 but from 1965 to 1975 the percentage rates of growth were marked down in accordance with the average income for 1965-75. The elasticities in the base period are given in Table 4 and these correspond exactly to the simple growth rates for each 1 per cent. compound growth in total expenditure from 1957 to 1965 in all cases. Minimum simple growth rates are given for 1965-75 corresponding to assumption Bc where income increases fastest. Maximum simple growth rates are given for 1965-75 corresponding to assumption Aa. For fats, sugar, cereals, potatoes and dried pulses a lower growth rate for 1965-75 was chosen arbitrarily for all rates of increase of income. For many products, especially fruit and vegetables, no change in these simple growth rates was expected.

In many cases these modifications of the income elasticity for purposes of forecasting may appear trivial compared with the initial difficulty of estimating the income elasticity in the base period. But for some commodities where a rapid rate of growth is expected the difference can be quite substantial. In the case of poultry meat the consumption in the base period is 194 thousand tons. Using a constant elasticity of 2.0 under assumption Ac an increase of consumption to 292 in 1965 and 519 in 1975 could be expected at constant prices. Under the modifications laid down the consumption is 278 in 1965 and 387 in 1975 at constant prices. The actual elasticity by 1975 will have fallen from 2.0 to .86.

In addition to the effect of income on consumption there is considerable evidence of a negative trend for consumption of some commodities. These are mostly associated with an expected decline in manual labour and exercise in general. We have considered that some commodities (especially pigmeat, cereals, potatoes and dried pulses) for which the consumption is relatively high among manual workers are likely to be subject to a downward trend, as the importance of manual work declines. A case might be made out for adjusting the income effect for this tendency on the grounds that this rate of decline might be associated with increased automation, productivity, etc., but we preferred to treat it as a simple trend. Estimation was difficult. We had rough information concerning the differences in consumption between different classes of manual workers together with some information concerning the trend changes in the structure of occupations since 1921. These two pieces of information in themselves do not account for any substantial trends in consumption: but patterns of consumption by occupational structure may give a clue to the effect of a general decline in energy requirements. From budget data we assessed the difference between manual and non-manual workers at about 10 per cent. for consumption of meat and cereals; 20 per cent. for potatoes; 40 per cent. for pulses. We had some reservations concerning the difference in the case of meat, which might have simply reflected more lunches out in the non-manual classes. The differences quoted were sufficient to

cover rather less than 250 calories per head per day. It was considered that this difference could be spread out over 20 years to allow for decline in general activity. This implies that a trend per annum of $-\frac{1}{2}$ per cent. for meat and cereals and -1 per cent. for potatoes and -2 per cent. for dried pulses is appropriate. Somewhat smaller trends for meat were taken owing to our uncertainty and were concentrated on the pigmeat and beef, not on the poultry and mutton. The positive trend in coffee which is given may also be regarded as a trend which is associated with the occupational structure: although we prefer to regard it simply as a change of taste.

The commodities to which these income and trend effects apply are given in Table 4 and normally cover total consumption of these foodstuffs in manufactured products as well as direct purchases. In all cases except eggs consumption estimates only covered commercial supplies moving into consumption. The free supplies for fruit and vegetables were expected to decline by about 20 per cent. by 1965 and 40 per cent. by 1975. We did not expect the whole of this decline to be transferred to the commercial supplies; but that half of the decline would be transferred for tomatoes, fruit and vegetables other than potatoes; while 75 per cent. of the decline in free supplies of potatoes would be transferred to the commercial supplies. The level of free supplies was taken as independent of the market price or any other factor in all the forecasts.

The following brief references may be made on the income effects assumed for the separate commodities which are not entirely explained by direct application of income effects from budget data. The estimates for alcoholic drinks have been marked down below those derived from budget data. There seems to be some conflict between time series and budget data on this point and the figures given are an uneasy compromise. The cocoa powder estimate is taken as a mixture between a low income effect for cocoa for drinking and a high income effect for cocoa for chocolate confectionery. The cocoa butter consumption is related to chocolate confectionery only and is more elastic with respect to income. The figure for coffee is a weighted average of a high income effect for ground coffee, a lower one for coffee extract, and a tendency to buy better quality extracts containing more coffee as income rises. The trend of 1 per cent. per annum is associated with coffee extract rather than ground coffee. The income effect for tea has been marked down from a slight positive to zero in view of the trend towards coffee. Milk products other than butter and cheese have been treated as a group and the income effect of .52 is a weighted average of a high income effect for milk products used as cream, icecream and chocolate and a low income effect for purchases of dried milk and condensed milk. For the fats group there is a clear positive income effect for butter with a persistent negative trend effect towards margarine due to technical improvement in margarine. The total market for margarine and butter is taken as insensitive

to income up to 1965 and falling slightly thereafter. The market for margarine will be given by simply estimating what is left after the butter consumption has been forecast. Consumption of lard and compound falls with income, but consumption of other fats like coconut oil used in manufactured foods is expected to rise with income. The income effect for eggs covers all eggs including those in confectionery and free supplies for our purposes in forecasting. The income effect for vegetables by weight has been marked down a little from .30 to .25. Data from budgets and time series would certainly cover the higher figure; but difficulty in preparation and increasing laziness (in spite of all the help from canning and freezing of vegetables) will probably work against the income effect. Processing may actually prevent some waste in the preparation of vegetables. In the case of fruit the rather high income effect covers a weighted average of a low income elasticity for jam and marmalade, a higher income elasticity for fresh fruit and a still higher income elasticity for processed fruit and fruit juices. It did not seem that the same adjustment for economies of preparation would apply to fruit when moving from the natural to the processed form. It seemed relatively easy to dispose of large quantities of fruit as fruit juices which would not appear to the consumer to displace equivalent quantities of fruit. (The consumption of blackcurrant juice rather than blackcurrants would seem to be a relevant case.) Hence we made no mark down in the income elasticity here. A more detailed treatment of the fruit and vegetables will be made after the preliminary forecasting of these broader groups has been made. The income elasticities for meat are taken to include meat consumed at a later stage as manufactured meat except for the canned meat which is imported. Likewise the fish includes the processed fish except for imported canned fish. The offal is excluded from the list given here and will always be taken to move in line with the supplies of fresh meat. It is actually possible to separate offal from the corresponding supplies of fresh meat, but we still felt that the tie-up on the supply side was still strong enough for us to ignore the possibility. The market for offal in the U.K. is generally fairly strong. Any short fall of the demand for offal below the demand for carcase meat is considered unlikely, but if it did develop the surplus could certainly be absorbed by the trade in cat and dog food. The income elasticities for meat have already been raised a little to allow for inclusion of meat used in the catering trade.

The estimates of the effect of income trend and consumer unit changes lead from the estimates of consumption in the base period 1955-9 to estimates for demand at constant prices in 1965 and 1975 in Table 5. These are given under assumption A and B as well as assumptions (a), (b) and (c). A roughly weighted index of the value of the increases in consumption at the farm gate or import level is given at the foot of Table 5. This only covers the food items and ignores quality improvements. Only the more optimistic forecasts suggest that an increase of more than 1 per cent. per annum can be maintained at constant prices.

Forecasting of Home Supply at Constant Prices

Trends in Yields

The treatment of the forecasts of home supply is more complicated than the forecasts of demand at constant prices and involves several stages. We divided production into two aspects which we will refer to as scale and intensity. In the case of crops scale refers to the acreage and intensity refers to the yield. In the case of livestock scale refers to certain fundamental units of production - the total number of cows, the number of calves reared, the number of ewes for breeding, the number of breeding sows, the number of adult fowls. These correspond to production of milk, beef, mutton, pigmeat, eggs. Intensity of production is defined as production per unit of scale in the case of livestock. We considered the intensity of production as a matter of technical progress in the majority of cases; and made estimates of the likely rates of increase of yields on the basis of past trends supplemented by a study of the likely effect of increased fertilizer application on crop yields. The rates of increase assumed are given in Table 6. They are expressed as simple interest rates rather than as compound interest rates - because we considered that at higher yields it would be more likely that the absolute increases (in yield per annum) would fall rather than rise. For 1957 to 1965 different rates of increase from those for 1965 to 1975 were expected in some cases. The yield increases finally adopted are given in Table 6. Those for wheat and barley have been reduced somewhat below trend to allow for the probability that yield increases due to further applications of fertilizer may taper off. The yield of sugar beet has been marked down considerably below trend because there is considerable evidence that fertilizer applications here are near the optimum level; further increases in yield should come as a result of improved strains and methods of cultivation only. The potato increase is in line with a trend which is rather low. It must be considered to occur in the face of an expected increase in the proportion of early potatoes. In potatoes also the rate of fertilizer application is close to the optimum level; but methods of expanding yield are likely to be explored both for sugar beet and potatoes in view of the restriction on acreage. The increased yields of fruit are reasonably consistent with past trends in official data: it seems that these yield increases demand considerable progress in the adoption of modern techniques of spraying, protection against frost, etc. The yield increases for dessert apples and pears are put at a higher rate than for orchard fruit in general on account of the higher proportion of younger trees. Considering that the time series for fruit yields are not very reliable as a basis for calculating long period trends we feel very hesitant about predicting such a large increase in yields: but there has been much scrubbing, replanting and modernization over the last ten years and we finally accepted these high rates; we do not however consider they are as reliable as the yield increases for other crops. No evidence of any systematic increase in yields

of vegetables is available; irrigation is the only likely reason for increased yields, and although this has expanded rapidly (and is likely to continue to do so) the irrigated area is too small to make any impact on average yields. In spite of increased use of fertilizers, pulses have failed to show any systematic yield improvements.

The milk yields of cows and egg yields of hens are considered likely to increase at the rate of 1 per cent. and 2 per cent. per annum respectively, partly due to breeding and partly due to improvement in environment. Feeding to yield is considered an essential condition for these increases. The increases are consistent with available data on trends. For 1965-75 we considered egg yields would expand at a somewhat less rapid rate when the yield exceeds the mark of 200 eggs per bird. For milk yields the yield is calculated on the basis of the average number of all types of cows in June and December. It was felt reasonable that the yield per cow should show some response to price as well as trend. We finally decided to allow an increase of 1 per cent. in yield for each 5 per cent. rise in the milk-feed ratio and a .7 per cent. fall for each 10 per cent. rise in the price of beef. This negative effect of beef prices on milk yield allows for the probability of some increased consumption of milk by calves as a result of increases in beef prices as well as some change in the proportion of cows not being used for dairying.

It was considered that the output of mutton per ewe would increase with an improvement in the lambing ratio. The increase of $\frac{1}{2}$ per cent. per annum is not unreasonable and is consistent with the apparent increase in the ratio of ewes to lambs at June Census over a long time period. No time series of the true lambing ratio was available. For pigmeat it was assumed that after 1965 some of the benefits of the progeny testing schemes for pigs would result in some increase in the litter rates of sows. No evidence of improvement can be derived from recent census data, so no improvement is expected until 1965. No serious fall in the weights of animals slaughtered was anticipated for cattle, sheep or pigs. It was far from obvious that the incentives for lighter cattle and sheep would be adequate to encourage lower weights; while for pigmeat the probability is that the proportion of lightweight and heavyweight pigs may rise at the expense of middleweight baconers. Some slight improvement in the wastage rate among animals would be quite adequate to balance any tendency to lower weights in pursuit of quality.

Trend in Scale of Production

As well as the trend in yields of crops and livestock some trend in the scale of production can be expected. These trends are net of any effect of price changes. Of course the total acreage of farm land can be taken as more or less fixed - in fact we expect it to decline at the rate of .1 per cent. per annum. But in spite

of this some increase in the overall scale of farm production seems probable. Over the period 1923-58 a trend increase of about ½ per cent. per annum seemed to be possible in spite of an even larger rate of wastage of land. This was only partly due to a reduction in the number of horses; increased density of stocking of other animals and improved utilization of grassland were probably responsible for about .3 per cent. per annum. It seemed that we could not expect much further benefit from a reduction in the number of horses because it is already at such a low level. But a rather more rapid rate of improvement in the output from grassland seems reasonable. We decided that an increase of about .4 per cent. per annum in the overall scale of production was possible. Translated into practical terms this meant an increase of 15 thousand cows, 15 thousand calves, 62 thousand ewes and 7 thousand pigs and ½ million hens per year on the livestock side with an increase of 30 thousand acres per year on the grain side. In the present circumstances no increase in root crops for sale is possible. These increases were not themselves calculated from trend but appeared as a reasonable allocation of the total increase in view of the fact that it was expected to stem largely from two sources: first the improvements in grassland management, second the desire to make use of family labour on the smaller farms as this labour is liberated by mechanization and other technical improvements. For these reasons most of the increase goes on the livestock; and the pigs and hens, although not in themselves users of grassland, are given a fairly large share of the trend. The method of extrapolating trends based on past performance was not used very much. Downward trends in the acreage of oats, forage peas and beans, and soft fruit have been observed over the period 1923-58. In view of our belief that there are factors at work which have arrested and may even reverse the trend in soft fruit we have ignored this observed trend. The trend itself was probably due to three factors: disease, rising labour costs and the fall in the practice of mixing orchard and soft fruit. Rising labour costs will presumably continue, but the placing of contracts for large areas of soft fruit for freezing and for fruit juices will probably give sufficient encouragement to prevent acreage falling at constant prices. A steady decline of about 2 per cent. per annum in the acreage of peas and beans for fodder (it consists almost entirely of beans) is projected. The decline in the acreage of oats is rather more difficult to assess. The decline in the pre-war period was about 50 thousand acres a year, in the post-war period nearer 100. We considered several factors as chiefly responsible; the decline in the number of horses on farms, the replacement of the binder by combines, the relative improvement in strains of barley and wheat especially in standing power. The decline in horse numbers now becomes irrelevant whereas it was probably the major factor in the pre-war period. In the post-war period all the factors seemed to be working together. In the future we thought that the negative trend would only be 50 thousand acres. A further 10 thousand acres per year was taken off the acreage of mixed corn, this very sharp decrease being due to adjustment to free market conditions in the grain trade - but mixed

corn should behave in rather a similar manner to oats in the future. Most of the decline in oats and mixed corn is considered to be taken up by barley. A small rise in wheat acreage is anticipated at fixed prices in view of the increasing yields. The actual size of the trend increase in the barley acreage is obtained as a residual from the trend assumed for all grain. Observation of recent data would indicate an extremely large trend, but the figure of 80 thousand acres per annum seemed more reasonable. The trend movements as a whole are considered to take place at constant prices of the end products and imported feed, with rising labour costs for hired labour and with falling costs for machinery, fuel and fertilizers. Although not very large compared with yield increases projected they are sizeable and especially important for livestock.

Trends in the scale of production of livestock and crops are given in Table 7. The trends given in Tables 7a and 7b are the only trends which affect output directly. It must again be stressed that these are long run trends at constant prices. There are also decreases in the majority of the root crops and forage crops which have been persistent over a long period. The only forage crop which has shown a persistent increase is kale; the trend being partly associated with the rise in the population of dairy cows and partly with its response to fertilizer applications. Trends of -3 per cent. and -2 per cent. seem appropriate for turnips and mangolds; $-1\frac{1}{2}$ per cent. for rape, -3 per cent. for vetches, +2 per cent. for kale. The chief reason for the downward trend in root crops is their extravagant demand for labour. The abandonment of these intensive forage crops has been balanced by a shift away from permanent grass in favour of temporary grasses. No explicit trend can be given for these grasses because we must consider the grass acreage as a residual after the need for other crops and the decline due to demands on land for other uses have been met. A general trend towards temporary grasses is expected to continue provided this does not lead to an unreasonably large fall in the permanent grass acreage.

Assessment of the Equilibrium Scale of Production 1955-9

In this section (and in the subsequent section on farm rents) we are concerned with estimating - mathematically and otherwise - the scale of production which the agricultural industry would have considered appropriate in 1955-9, at the prices ruling in 1955-9, if sufficient time for adjustment had been available. We are not simply concerned with estimating whether production will rise or fall at constant prices; nor are we trying to say what the correct pattern of production was in 1955-9 given the application of expert knowledge. Indeed, the application and distribution of technical knowledge is assumed to remain at its 1955-9 level. In the language of economic theory we are trying to estimate that point on the long run supply schedule of the agricultural industry which corresponded to the price situation in 1955-9.

The mathematical approach to the problem was a by-product of work done on the long run effect of price on supply. In this we used a method developed by Marc Nerlove of the U.S.D.A. A full coverage of this work can only be considered as an appendix; but the results are made use of here and in the subsequent discussion of the effect of price on supply. Nerlove's method includes the calculation of a rate of adjustment for each product which measures in effect how far farmers are prepared to go each year towards an equilibrium or target acreage which corresponds to prices ruling in the previous year. If, for instance, the farmer grew 10 acres of wheat in the previous year and if he considers that (in the long run) 20 acres of wheat would be a sensible acreage to grow on his farm at last year's price level, and if his rate of adjustment is .3, then we would expect him to grow 10 + .3 (20-10) = 13 acres this year. The rate of adjustment may be low for two reasons; first, because the farmer is uncertain about prices and only adjusts his expected price part-way towards last year's price level; second, because there are technical difficulties in the way of making rapid adjustments. To these considerations we may add the simple dislike of making any change at all. Although it is a little naive to assume that the rate of adjustment will always be the same, our calculations from time series give some clue as to the rate of adjustment in 1955-9. We are therefore in a position to make some estimates of the equilibrium level of supplies in 1955-9 on which long run price effects, trends, etc., must be super-imposed. It seemed clear that the base period 1955-9 was not in equilibrium for livestock production, nor for some crops. In the case of a crop for which there is no long period trend the equilibrium acreage dictated by the economic situation in 1955-9 can be calculated from surprisingly little data. It can be obtained from the average yearly increase in acreage from 1954-60 and the rate of adjustment towards equilibrium which we have calculated (admittedly without great precision) for most crops from time series. It appears to be independent of any price changes during 1954-60. For instance, for dried peas for human consumption the formula gives that the excess of the equilibrium over the observed acreage in 1955-9 = average increase in acreage from 1954 to 1960 ÷ rate of adjustment. Hence the equilibrium acreage is given by $94 - 16 \div \frac{1}{5} = 46$. This is a very large drop; but not unreasonable considering that it is near recent levels of production.

Much clearly depends on the exactness of the rate of adjustment (especially where it is small) and on the exactness of the comparison between the 1954 and the 1960 acreage. If random elements such as weather had seriously affected the acreage it would probably be safer either to adjust for weather effects, where these can be judged with reasonable accuracy, or to compare 1954 and 1955 average with 1959 and 1960 average. This latter procedure was used for open air vegetables. For cereals it appeared that there would be great difficulty in making suitable comparisons. In the case of wheat the year to year fluctuations were more important than the trend over several years. Fortunately both 1954 and 1960 acreages of cereals followed good sowing conditions for wheat; and no

adjustment for weather seems to be necessary. For livestock nearly all the movement in numbers seems to result from deliberate changes by farmers or inaccuracies in statistics. There is some evidence that the increase in the number of fowls from 1954 to 1960 has been aided by a change in the methods of counting up poultry since the Egg Marketing Board has been introduced. There is also strong evidence that weather conditions affect sheep numbers; but the effect is not important in the comparison between 1954 and 1960. In order to avoid reflecting changes in the seasonal pattern of production between 1954 and 1960 livestock numbers were usually averaged between June and December.

Where a long run trend is assumed the formula for the equilibrium scale of production is a trifle more complicated, e.g. equilibrium - observed acreage = (rate of increase per annum for 1954 to 1960 - assumed trend) ÷ rate of adjustment. Unfortunately this second formula did not usually give results which we considered quite as plausible as those given by the simpler formula. For instance, for pigs and hens we have lower estimates of the equilibrium scale of production than in the simple case: 74.8 millions as distinct from 76.3 millions for hens, and 700 thousand rather than 716 thousand for sows. It seemed that in 1959-60 adult fowls appeared to be roughly in balance at 75.4 millions and in June 1960 sows were probably increasing still at 723 thousand. The price cuts for pigs and certainly for hens should have more than offset any trend increase in the equilibrium scale of production (the egg/feed and pig/feed price ratio being substantially lower in 1959-60 than in 1955-9). We consider that in both cases the simple estimate of the equilibrium scale of production is the more reasonable one - in fact this applies in practically all cases that are subject to trend. It seemed better to fit our forecast to the 1960 situation than the 1955 situation, hence the simpler formula would have been preferred even though it was incorrect. It was modified, however, in one respect. Since the formula took note of 1960 it was felt that the equilibrium situation calculated corresponded to technical knowledge in 1956-60 rather than in 1955-9. So the simpler equilibrium estimate was reduced by one year's trend increase only.

The estimates of equilibrium scale of production in Table 7 were therefore made with some regard to a reasonable view of the most recent information concerning price, acreage, livestock numbers, etc., and with some regard to the mathematically correct formula. The latter is in fact sensitive to differences of opinion concerning the rate of adjustment. A higher estimate of the rate of adjustment for pigs and a lower rate for other livestock would in fact have made a closer correspondence between the theoretical equilibrium level and the level which we adopted. In view of the fact that there are so many other factors involved it is perhaps surprising that the results of the two methods of approach were as close as they seemed to us to be. The 1957 Agriculture Act for instance gave some assurances to farmers which were not applicable to 1954 to 1956 - so it may not be so strange that the behaviour of farmers in 1959 and

1960 tended to give an impression that the equilibrium was a little higher than the calculated value. Moreover, it may be doubted whether Nerlove's model with respect to price uncertainty was entirely appropriate during the period. The general expectation seemed to be that prices would fall: whereas Nerlove's model assumes them to be a weighted average of past prices (which were higher than current prices). This difficulty could be by-passed by saying that the rates of adjustment used were only associated with technical difficulties rather than price uncertainty. But they were in fact calculated over periods in which price uncertainty had considerable importance. (The adjustment rate for pigs for instance would have been much higher if there had been no price uncertainty.) The difficult question to answer is why after a period of high prices farmers should still be in the process of adjusting their scale of production upwards. The reason seems to be that the adjustment is not so much an adjustment towards new prices of the final products as an adjustment towards lower feed prices and the freedom to buy unlimited quantities of feed. The expansion of livestock numbers under the influence of the 1947-9 expansion programme would have probably been very much larger if there had been unlimited access to feed at the low (subsidized) price. Later in 1950-2 feed prices were high which acted as a check on expansion in some sectors. Sheep numbers were kept below equilibrium by the disastrous winter of 1946-7 and another severe winter in 1950-1; and the high level of farm prices as a whole probably helped to keep sheep numbers down until recently. The restrictions on purchase of feed and the existence of a black market in eggs probably hampered the development of the more efficient methods of egg production in favour of the backyard hen up to 1953. Between 1954 and 1959 the industry was expanding to meet a price which would have justified a much higher level of production. In eggs, and to a lesser extent in other livestock products, the development of more specialized methods of production had to wait until after decontrol of feed supplies. Often these more specialized methods involved an increase in scale and a reduction of costs. We do not think of these methods as being the product of a fall in prices. (In fact we take the view that the response of farmers to price is generally an orthodox positive response.) But they may of course enable farmers to face lower prices through the spreading of overhead costs. The rise in the scale of production in eggs over 1954-9 was not a manifestation of a perverse response to price cuts. If these price cuts had not been made the increase would have been even larger. In the case of milk production the situation in 1954-9 is rather easier to explain. There do seem to have been some substantial economies of scale to be made in dairying from increasing cow numbers, and the feed restrictions and the fear of feed shortage probably prevented their full realization before 1954. But the economic incentive towards increasing numbers was not entirely absent. The milk/feed price ratio improved steadily after 1951 and prices of beef (in our view a complementary product to milk) showed a relative improvement. It is probable that in the period of high feed prices (1951-4) many cows were cleared as a part of T.B. eradication. The strength of the rebound since 1954 may be partially explained by this.

In Tables 7a and 7b the observed and equilibrium levels of production are shown for crops and livestock respectively. For crops the adjustments are on the whole less important than for the livestock. Much of the adjustment towards barley is interpreted as a delayed response to a situation that became effective after the decontrol of feedingstuffs. Other important changes are a reduction of acreages of pulses and tomatoes. The equilibrium acreages calculated for sugar beet, hops and potatoes are artificial owing to acreage controls, hence they are given in brackets. For other vegetables the equilibrium acreage seems to be higher than the observed acreage with some shift towards the more valuable open air vegetables. Although the acreage of fruit recorded at the June Census was steadily falling over the period it was uncertain how much of this could be attributed to the disappearance of derelict orchards from the statistics. Our forecasts for acreage are chiefly based on the 1957 orchard fruit census; no great effort was therefore made to assess the equilibrium scale of production for orchard fruit and it is assumed unchanged in the table. There seems to be every indication that the soft fruit acreage was roughly in equilibrium over 1955-9. Some minor products like flax and linseed have disappeared while the acreage of flowers in the open appears to be on the increase. Taking the crops as a whole it appears that the scale of production would have been a little lower in the equilibrium position than the observed scale over 1955-9. An attempt at rough evaluation of the difference is made in the last column of Table 7a. It amounts to about 1 per cent. A considerable part of this is however associated with the change in the potato acreage and is therefore suspect.

Estimated equilibrium levels for grass and forage crops are made more crudely in Table 7c. One of the adjustments made by farmers during the period was to increase their acreage of temporary grass and decrease their acreage under roots. Although this movement was similar to the long run trend observed over the time series since 1924, there was a particularly sharp decline in turnips and mangolds over the period 1954-60, which can in part be attributed to a readjustment of production patterns towards a situation in which winter feed could be purchased more cheaply and without difficulty. The decline in the acreage of rape over the period is difficult to explain in view of the rising number of sheep, and has about balanced the increase in the acreage of kale. The adjustment upwards in the acreage of kale towards an equilibrium level of 382 thousand acres corresponds to the upward adjustment of cattle numbers. The starting point for forecasting the acreage of most root crops will be put at the equilibrium acreages shown in Table 7c, which can only be assessed roughly in the absence of any calculated values for a rate of adjustment. Long run trends and adjustments for changed livestock populations may be superimposed. Treating grass as a residual it seems that there would have been a very much higher temporary grass acreage in the equilibrium position and that this would have been about

sufficient to balance a decline in forage crops. These adjustments do not of course directly affect the output forecasts for 1965 or 1975, but will be considered later when considering the demand for feedingstuffs.

Besides the distinction between observed and equilibrium scale of production we need to make a more obvious correction to the data for supplies of meat in 1955-9 before using them as a base for forecasts. The cattle and sheep populations were still expanding during the base period at a rate in excess of the assumed long run trend. With pigs the reverse was happening. Adjustments to output therefore need to be made for stock changes, and this is done in Table 7b. At the foot of this table we have two valuations of the difference between observed and equilibrium livestock production. First the actual differences in supplies which move into consumption are valued at end product prices. Second a certain value is associated with each unit of scale of production which deducts expected consumption of concentrated feed from the expected value of output: this tacitly adjusts both observed and equilibrium production for stock changes and only takes note of adjustments made at the top of Table 7b. Both methods of valuation indicate that livestock production was about 7 per cent. below equilibrium in the base period. Throughout the calculations the net imports of cattle are assumed constant: it is highly probable that in a change towards equilibrium, and with the number of home bred calves at a higher level, we would see an increase in the proportion of fat cattle imported from Eire and a fall in the proportion of store cattle. Taking the crops and the livestock together it appears that there would have been an increase in the value of production less feed costs (but including all imported cattle) of about 3-4 per cent. if farmers had been producing at an equilibrium level. This difference is large when one considers how insensitive the overall level of production is to price and other factors. It seems comparable with an increase that might be obtained by a 10 per cent. rise in prices.

Disequilibrium of Farm Rents

Some supplementary evidence that the level of production was below equilibrium in the base period can be gathered from considering the level of farm rents. It is well known that farm rents have been well below their economic level, though it is difficult to assess the size of this difference. Recent rents received for farms let by tender have been very much in excess of the average level. Another approach which we made to this problem was to examine the size of the premium on farms sold with vacant possession; deducting a reasonable allowance for the convenience of having a farm with vacant possession which we assumed to be equal to the premium in 1938. The premium was expressed as an equivalent rent at 25 years' purchase and the sample of farms bought and sold for 1955-9 was blown up to cover the difference between the average and

the "economic" rent on all farms in the U.K. The difference appeared to be about £50 million per annum. Rather more than half the farms in the U.K. are owner-occupied farms, but the size of the tenanted farms is rather larger on average: the figure above covers both owner-occupied and tenanted farms. We may now ask what kind of a cut in price would be necessary to reduce the "economic" rent to a level where it was equal to the average rent; and consider the hypothesis that such a cut in prices could be made without reducing the general level of farm output. It seems probable that the size of the price cut would have to be at least 3½ per cent. on all farm products since this would reduce farmers' gross receipts by £50 million, even if no reduction in output were to occur. But some economies might be made at lower prices without reducing output so the actual price cut necessary might be 5 per cent., certainly less than the 10 per cent. suggested as necessary to bring the equilibrium level of production down to the observed level. This assumes prices of inputs other than land are fixed. Until the premium for vacant possession falls to a reasonable figure the supply of one of the factors of production - namely the farmers themselves - will probably be more than sufficient to meet the available number of farms. Moreover, any decrease in the price of farm products will not reduce the supply of farmers to the point where farms are lying idle; and may even improve the average quality of farmers by selection. It might be argued that in this kind of situation there is a backward sloping supply schedule for farm enterprise and hence for farm production as a whole. Some reflection will show that the effect of prices (even under these conditions) on the inputs other than farm enterprise will probably be more important and dominate the situation. First by cutting prices the appropriate level of use of these other inputs will fall, more extravagant use of them being discouraged by lower profits, and hence a fall in production will occur. Even the effect of a fall in incomes of farmers, which may as we have suggested induce farmers to increase the supply of their own enterprise or to make way for those that are more enterprising, does not in itself lead inevitably to an increase in production. Two other kinds of reaction must be taken into account. First, some extravagant but productive investment by farmers which is designed to avoid income tax would be eliminated by a fall in incomes. Second, those farmers who prefer to invest out of last year's profits will be deterred by a fall in incomes. Both these two effects apply with even greater force to investment in inputs which are not regarded as capital expenditure - feed, fuel, fertilizers, etc. Nevertheless, it seems that we should expect the response to price to be a little blunter under conditions in which rents are not in equilibrium even if we do not anticipate a perverse response. The consideration of farm rents would possibly lead us to the conclusion that prices

could probably fall by 5 per cent. or possibly more* without such a large drop in farm production as one would normally get in these circumstances. The comparable statement that we made concerning the equilibrium output was that prices could probably drop by about 10 per cent. without any fall in the equilibrium scale of production below the observed scale in 1955-9. We did not assume anything about the lessening of the price response nor did we imply that the 10 per cent. cut in prices would have been non-effective. Without it production would have tended to an equilibrium level 3 or 4 per cent. above the observed level: with it the production is assumed static (apart from technical changes). Both arguments indicate that there is some slack to be taken up either in the shape of increased production or lower prices, or higher rents; in some ways the two lines of argument back each other up, in some ways they conflict. It does seem that the argument concerning rents is not adequate to cover or explain a difference between the observed and equilibrium level of production of 3-4 per cent. and other factors along the lines indicated in the previous section need to be introduced to explain away such a situation. The quantities involved appear too small especially when we consider that half the production does not come from tenanted farms at all. It does appear that the slack will in fact be taken up either in higher rents as a consequence of the more favourable consideration of landlords under the 1957 Act or in the form of lower prices. It has often been mentioned by people with experience in advising farmers - especially good farmers - that few farmers farm their land as well as they know how to. It seems likely that in the future quite a lot of this extra knowledge will be applied. Even if we have been guilty of some error of judgement in overestimating the equilibrium level from which we start our forecasts, it is reasonable to suppose that the farming industry will attain a fuller use of its resources in the future as a part of the challenge of lower prices and this argument may be brought forward to supply any inadequacy in our previous reasoning. In point of fact we think that over the period 1955-9 farmers were making very much fuller use of their resources, that this was happening fairly quickly and was only to a minor extent a result of adversity. But if anyone prefers to think that the adversity was necessary to jolt farmers into this equilibrium position that we have calculated they are welcome to that interpretation of our forecasts at this stage; from this stage onwards changes in the level of production are considered simply in terms of trends due to technical factors and orthodox responses to price.

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*Once the assumption is dropped that farm production is invariant with respect to price changes, a fall in price will lead to a reduction in the use and price of inputs other than land and farmers' enterprise, and it will require a larger increase in price to eliminate the difference between average and economic rent. Perhaps 7 per cent. would be a reasonable estimate.

The Effect of Price on Supply of Agricultural Products

The next stage is to consider the effect of price on the scale of production in farming. We need this information for two reasons. First, to assess the effect of changes in government policy, which are usually operated through the price mechanism; second, to reconcile supply and demand given a certain degree of price protection by the government; third, to assess the effect of changes in imported grain price on production of livestock products. The assumption that prices will not change is impossible, so we must have estimates of the effect of price changes for some of the more important agricultural products on supplies. The time of adjustment that is appropriate is rather uncertain, but it may be anything up to 8 years for forecasts relating to 1965 and anything up to 18 years for forecasts relating to 1975. In practice this means that we need a long run price effect for practically every agricultural product except orchard fruit for which we require intermediate price effects for 1965 and 1975. The assumptions that we have made concerning the effects of price on supply are set out in Table 8. Before going on to consider which prices affect what products and why, some explanation of the form and meaning of Table 8 seems desirable. Each 1 per cent. change in price is assumed to be related to an absolute change in the corresponding scale of production; the responses all being in direct proportion to the change in price. It was necessary to give Table 8 as a matrix of price effects in order to give a definite and explicit answer to the question, "What happens during a general change in farm prices"? The table does not mean that we know all the answers down to the last significant figure; but we are obliged to have a definite opinion about each figure before making our forecasts. Some of the small figures are included because they are more reasonable than zero, not because they have been proved to be significantly different from zero.

We spent some time analysing price responses along the lines suggested by Marc Nerlove's work. We obtained many results, some more sensible than others, some statistically significant, others of no significance at all. We have not attempted to consider a range within which each price effect might reasonably lie - a set of high or low forecasts for each element of Table 8 would present about 2.4×10^{24} different opinions about price responses in general - but to give a single opinion on the structure of price responses which has some grounding in calculated results. Criticism that has been made of Nerlove's methods usually suggests that it leads to estimates of supply elasticities which are too high. Although this may be a fair criticism in some cases where the rate of adjustment is very small, it seemed to us that the price effects that we calculated and those given in Table 8 are, if anything, too cautious.

In choosing an ordered set of price effects the first step necessary was to reduce the list of prices of agricultural products to a reasonable minimum. Those chosen for their effect on output were the prices of fat cattle, fat sheep and lambs, fat pigs, milk, eggs, wheat, barley, oats and vegetables. They are considered inclusive of subsidy payments. Moreover, the calf subsidy is considered as included in the price of fat cattle and the deficiency payments (whether they are on acreage or output) are included in prices of cereals. The price of eggs is considered as the price of eggs at the packing stations. The price of vegetables refers to open air vegetable prices at wholesale. The prices of fat cows, fat ewes and fat sows were not considered as a part of the price incentive. Although it seemed reasonable to suppose that in the long run the price of fat ewes, for instance, was a part of the profitability of sheep farming; it did seem that in the short run at least, and possibly in the long run also, it could be regarded as a part of an incentive to slaughter breeding ewes. It was very difficult therefore to estimate the long run effect of prices of culls on the level of production. The prices of culls are in fact no longer supported by government guarantee; this method of price support probably secures a higher quality and quantity of meat production than would be obtained by an overall subsidy on meat. Since we wished to use the same table of price responses for both changes in the rate of subsidy as a percentage of farmers' prices, and for changes in the end product prices at given rates of subsidy, it was much more convenient to exclude prices of unsubsidized production when the major proportion of production is in fact subsidized. This leads similarly to excluding the price of eggs which do not pass through the Egg Marketing Board from the price of eggs. Moreover not all the range of farm production is considered as being sensitive to price for the purposes of forecasting. The sugar beet, potatoes and hops are subject to acreage restrictions. Many minor crops are ignored, and intermediate forage crops except grain crops are also ignored. Tomatoes and fruit were not considered in the main part of Table 8; although there did appear to be some connexion between soft fruit and vegetable prices.

We consider that we have evidence from time series that the elasticity of cow numbers with respect to milk prices was probably a little under a half during the period 1924-60. It seems more likely to have increased than decreased. Also we consider we have firm evidence that the supply elasticity of the proportion of calves reared is about a half with respect to beef prices. It probably has not decreased even though the proportion of calves reared is running at a fairly high level, because the advances in artificial insemination with beef bulls have made the process of adjustment more flexible. If the calf subsidy is considered as a part of the fat cattle price then this will tend to increase the size and certainty of the response of calf rearing to price (as a means of increasing the proportion of calves reared this subsidy appears to have been highly effective). The beef price has a

further effect on the calves reared through its effect on the total number of cows. This effect appears to be significantly positive indicating a complementary relationship between beef and milk. Hence the total effect of beef prices on the numbers of calves reared is considerably in excess of a half. The proposition that the beef and the milk are in complementary relationship to each other will probably appear surprising. The idea that they are substitutes derives chiefly from the farm management angle where on the individual farm cows and calves are clearly in competition for available grassland. The extreme choices open to a farmer are usually to keep more cows and rear no calves (either for beef or replacement) or to concentrate on rearing all calves, possibly buying in calves for rearing. Clearly there is a substitutional relationship on each farm, but the two farming systems are complementary. Over the U.K. as a whole the evidence from time series suggests a very strong complementary relation. To a certain extent the result depends on the continuity of the present position in which the majority of cows are of a dual purpose breed. Most of the beef must come directly or indirectly from the dairy herd. If the structure of prices should change so drastically that we see two separate and specialized industries growing up our price response would be radically altered: no such change however seems likely. Out of respect for the opposing view we have modified the cross elasticity between beef and milk substantially from what it appeared to be in the time series 1924-58. The cross effect of beef prices on cow numbers has been reduced below the calculated value, and the effect of milk prices on numbers of calves reared is also somewhat reduced. In addition, it has been assumed that beef prices have the effect of reducing the output of milk per cow; either by increasing slightly the proportion of cows devoted to breeding for beef or by increasing the volume of milk consumed by calves. It is also assumed that there is a substantial effect of the milk feed price ratio on milk output per cow. The effects of price on milk yield are given in Table 8, but it must be understood that they do not correspond to any calculated estimates: they merely represent our opinion after considering many conflicting approaches to the subject.

For sheep we have fairly strong evidence that the supply elasticity is at least one and probably more. The response is concentrated in those areas where sheep farming is not the dominant industry and practically absent in the hill sheep farming. All our results tended to show that the effect of other farm product prices on sheep numbers is very strong and negative, stronger in fact than the positive effect of mutton prices. This conclusion was difficult to build into our matrix while still paying respect to reasonable conditions of symmetry among the various agricultural products; these symmetry conditions will be discussed later but the least we could do here was to ensure that sheep would show the smallest increase in production during a general increase in agricultural prices.

There is strong evidence that pig numbers are highly elastic with respect to price changes. Our own estimate of the elasticity is 4.0. This, like other estimates, represents a long run response to price and is at constant feed prices. Since there are no very obvious barriers to an unlimited expansion of pig numbers from a technical point of view this estimate, which was derived from analysis of time series, does not appear as unreasonable. It might also be argued that there are no obvious barriers to the expansion of egg production from the technical angle and in the long run. We had expected to obtain a rather high estimate of the elasticity of supply from time series. We did obtain rather uncertain estimates of about 1.3 from U.K. data which were confirmed by U.S. data. It seemed reasonable that as the poultry industry becomes more intensive and more similar to industrial production the effect of price on supply will increase. For this reason we increased our estimate to 2.00, which seems a more reasonable figure in any case. There was some evidence of a strong substitutional relation between pigs and hens. It was difficult to obtain precise estimates of the size of the cross effect which were small enough to be reasonable. We have assumed that the elasticity of supply is roughly halved when pigs and poultry are considered as a group rather than separately. The elasticity of supply of broiler production is considered to be infinitely large.

The evidence from time series suggests that the acreage of all grains is responsive to price in the long run and the supply elasticity is about a half. Within this group it is considered that barley is the most responsive to price, being in closer competition with oats and wheat than these last two grains are with each other. There are considerable areas in the north and west which are unsuited to the cultivation of wheat but are suitable for both oats and barley. The response of grain production to price has been arranged so that rather more than half of the price response on individual grains represents competition with other grains. There is some evidence from time series which supports this view.

Vegetables as a group are fairly responsive to price. The competition between open air vegetables and farm products seems to be fairly strong. The marginal expansion of acreage appears to be associated with farmers taking up the production of vegetables rather than by an expansion of the acreage of specialized horticulturists. For orchard fruit the supply responses used in prediction were not true long run supply effects. For prediction up to 1965 not much response is possible. A token response of .1 per cent. for each 1 per cent. increase in price is assumed on account of the possibility that price might have some effect on the culling of fruit. For 1975 a somewhat larger effect of price allows for the possibility of some adjustment of the acreage of orchards bearing fruit before 1975 in line with prospective prices.

The elasticity of supply of soft fruit and tomatoes appears to be about 1. The alternative crop for tomatoes which is most important is probably flowers. For soft fruit it is open air vegetables. Many of the figures in Table 8, especially the smaller figures, are merely padding. That is to say, they are cross elasticities designed in such a way that the total elasticity of all farm production with respect to price should be consistent with certain grouped calculations. Weighting by net output (deducting feed inputs) it appeared that the elasticity of supply for the overall scale of farm production could be estimated as .3. Since we are considering rather less than the full range of farm products we thought that a somewhat higher figure would be permissible. Another reason for expecting a somewhat higher figure in the future is the increased importance of industrial inputs. An illustration might be taken from the movement away from animal draught power towards mechanization. Any increase in the volume of cultivations used to require an expansion of the feeding of horses if not in the actual number of horses, and needed to be paid for out of agricultural production, now it is paid for out of increased industrial inputs. An effort to expand agricultural production should be less self-defeating in the future than in the past. All this suggests diminishing returns will be less important in agriculture in the future and the response to price greater. It seemed adequate if we introduced cross effects among the agricultural products considered in the main section of Table 8 which were consistent with an overall elasticity of scale of production net of feed inputs of .4 rather than .3 and the elasticity of gross production of .6 rather than .5. These cross effects were fixed in such a way that if each effect were weighted by the value of gross output associated with it, the matrix given in Table 8 would become symmetrical. In the special case of the relation of eggs and mutton we suppose that a rise of 1 per cent. in egg prices leads to a decline of 6 thousand ewes for breeding. Associated with each ewe we estimate there is roughly £8 worth of production; giving a total effect of £48 thousand. For the effect of the price of fat sheep prices on the number of hens, we know that the value of output associated with each hen is roughly £2.8 per year, hence the effect of each 1 per cent. rise of fat sheep prices on the number of hens should be close to 48 ÷ 2.8. The figures for hens are only given to the nearest 10 thousand, so we put -20 for the reciprocal effect which corresponds to the -6 we assumed to start with.

This kind of symmetry condition can only be proved under certain theoretical assumptions. One starting point is to regard the costs on each farm as a smooth function of all the crops and livestock produced. Under these conditions, as long as the costs of the inputs do not vary, we can show that the above symmetry condition holds - subject to the maximization of profits by farmers. The argument seems to apply equally well if there is an inflexible quantity of any of the factors of production (e.g. land) on each farm, while the other factors of production are supplied at constant prices. Under a set of assumptions similar to those used in linear

programming such a precise correspondence cannot be expected, the responses to price being discontinuous for individual farms. Nevertheless there did seem to be a tendency towards a similar reciprocal relationship even under these conditions. In spite of this theoretical support for the reciprocal relationship adopted we did not find it entirely convincing in some cases. For cereals we adopted the rule that the effects of price on acreage rather than value of produce were symmetrical. In the case of sheep we would have preferred to use a relationship which allowed for the probability that a rise of 1 per cent. in all farm products prices would lead to a decline in the numbers of sheep, without the corresponding assumption that a rise of 1 per cent. in sheep prices would lead to a decrease in the level of farm production as a whole. We felt that sheep behaved as a residual claimant for land after the needs of the more intensive crops had been met, but that sheep prices had very little effect on the other crops. Still we accepted this implication of the symmetry condition in all cases because if it were dropped we had very little to guide us in fixing the cross effects.

Other considerations that were taken into account in spreading these minor cross elasticities among crops were, that the grain consuming animals would be somewhat complementary to the production of grain, while the grass consuming animals would be competitive. This is of course all taken in the context of constant feed prices, the expansion or contraction of the grain prices being possibly due to variation of subsidy even under these conditions. The variation of the acreage of vegetables was considered as competitive with sheep and cattle via competition with acreage of fodder crops like kale, turnips, etc. Unless there was any special reason for assuming cross effects were concentrated between particular products, they were supposed to be diffused among production as a whole.

The effects of feed prices on production that were assumed were in accordance with results calculated for cattle, pigs and poultry. There is no evidence for the positive effect of feed prices on sheep numbers, but this can be deduced logically from the assumption that other livestock are competitive with sheep and are more sensitive than sheep to concentrated feed prices. The actual amount of concentrates fed to sheep is very small though it has increased a little recently. Similarly, some adjustments to the effects of feed prices on other livestock such as pigs and poultry were made to allow competition between them. For instance, we would normally expect the effect of feed prices on pig numbers to be more than half the positive effect of pig prices; but the equation relating pig numbers to prices includes a large negative term for egg prices which itself is logically related to feed prices. Hence in the final estimates the negative effect of feed costs on livestock numbers must be weakened by any assumed competition among livestock and strengthened by any complementary tendencies. The individual effects of feed prices must be consistent with the effect of feed on livestock production as a whole.

The effect of feed prices on oats and barley has been assumed to be positive quite apart from any indirect effect on the prices of oats and barley guaranteed to farmers. Similarly vegetables appear a rather more attractive form of intensive farming when feed prices are high and livestock is less attractive. We would not like to claim that Table 8 answers all the logical and practical difficulties in estimating the effects of price on production. It represents a compromise between many direct estimates derived from time series; some theoretical considerations which ought to have some relevance; and a smattering of knowledge concerning the necessary interrelationships between crops and livestock in actual systems of farm management and crop rotation. Table 8 does represent the assumptions that will be made concerning the effect of price on production in the forecasts for 1965 and 1975. These assumptions are explicit; the effects of price are considered to be quite reversible, and the context in which they will be applied will be a situation in which most prices must decline in real terms. The possibility that the supply schedule is non-reversible is so frequently treated as one of the proven facts of agricultural economics that some account of our line on this subject must be given.

From observation of the behaviour of time series we see no evidence for individual crops that the response to price was any greater when prices were rising than when they were falling; for the overall level of production there seems to be very little evidence either way. Most of the support for the idea that a fall in price does not cause a contraction of demand comes from the 1930s under conditions of unemployment, when it was difficult for resources to move out of agriculture. On the other hand, by delving into the past as far back as the period 1884-1914 one can find a situation in which a falling price appeared to be associated with a falling scale of production. Over the last five years or so there is an impression that a falling price level has given rise to an expansion of production: but we have already given some account of this period in the last section, giving reasons why we think that this expansion of production was caused by other factors and not by a fall in prices. The idea of an irreversible supply schedule is so complicated that we would require very strong evidence before incorporating it into our system of forecasting. We think we have some evidence which suggests that the supply schedule for farm products as a whole tends towards .3 or possibly more and that this supply schedule has a more or less steady upward trend. In actual application this may work out very much like an irreversible supply schedule; with bigger increases in supply corresponding to increases in price and lesser increases in supply to reductions in price. But the assumption on which we base the forecasts is that price changes are linearly related to corresponding changes of production for all movements in price, big or small, up or down.

It would have been useful if there had been some independent evidence (apart from that given by time series) on the likely size of response to price in the long run. Most of the production functions used in analyses of farm accounts relate many inputs to one output and are not usable as a method of deriving the effect of price on the scale of production: sometimes we can gain some idea of the effect of price on the yield of milk cows where a particular input is very important, but nothing concerning interrelated crops. Viewed logically one would suppose that under profit maximization the farm crops would be graded with respect to their intensity of use of scarce resources peculiar to agriculture - most of all land; the most intensive having the highest elasticities and so on down to the least intensive. Grazing livestock might have a slightly higher elasticity than one would expect on account of the possibility of fuller utilization of grassland at higher prices; but the general order of preference for high elasticities would be pigs, hens, vegetables, dairy cows, grain, cattle, sheep. The set which we calculated did not fall exactly in this order. If grain had shown a very much higher elasticity of supply than sheep it would have been much easier to have fitted logical cross elasticities among the products. Doubt about the size of the cross elasticities among crops and livestock has probably made us play down their importance rather too much. As the principle of profit maximization is probably non-applicable in many cases it can only be used as a general guide to what farmers are encouraged to do by the price mechanism. If this principle is considered useless, then reference to time series and the study of what farmers actually do in practice, or questionnaires about what they might do, seems the only possible approach.

It is likely that at some future date before 1975 a method of estimating price elasticities among crops by linear programming may be developed; for this we would need some knowledge of a frequency distribution of all the technical coefficients involved over the U.K. and a great deal of calculation. Unfortunately the forecasts need to be made before 1975 so the results calculated from time series using Marc Nerlove's methods were the only guide as to the size of the price elasticities that are involved in forecasting. His method of analysis also showed us that in most cases we could probably expect nearly all the long run price effect on scale of production to have occurred within five years. There may be some doubt, in the case of sheep and cattle, as to whether all of the price changes assumed for 1965 will have had time to work right through to an increase in output by then, and some further comment on the effects of price for the shorter period forecasts may be needed. This method which he pioneered seems to give more reasonable estimates of supply responses than most other methods; but there is always a certain proportion of unplausible results from any method of analysis and these have been intermittently modified: we hope that the final set do not appear too extraordinary.

The Support of Agricultural Prices

The main method by which the prices of agricultural products are supported in the U.K. is by deficiency payments. There is some support for prices by other methods, especially for fruit and vegetable prices by tariffs. These will not be considered here but in the section on imports. The level of deficiency payments is determined in the short run by the excess of the standard price promised to farmers over the market prices obtained for the farm produce. The government is able to fix the standard price about a year in advance, in consultation with the Farmers' Unions. Policy decisions are made effective mainly through variation of the standard prices on different products; not by variation of the rate of subsidy. But in our forecasts we are going to consider the effect of different rates of subsidy as a distinct effect of government policy. In the case of milk and potatoes, the deficiency payments must be considered as only a part of the support policy which is supplemented by the activities of the marketing boards dealing with these products. In the case of wool and eggs the subsidies are administered through marketing boards; but the activities of these boards cannot claim to be considered as the major contribution to the support of prices in the long run; this claim could probably be made and justified in the case of the Milk and Potato Marketing Boards. The deficiency payments for cattle, sheep, pigs and wheat are administered directly on the basis of sales by farmers; while those on barley and oats are given as retrospective acreage payments. The direct subsidy payments on fat cattle cannot be considered as the full extent of the support for beef cattle, since the subsidies on calves and the hill cattle have been almost as important over the 1955-9 period. In some years when deficiency payments have been low the calf subsidy payments have exceeded the deficiency payments. Taking these extra subsidies into account the support for fat cattle has not fallen very far short of the support for grain, pigs and sheep. Some payments are also made in the form of a subsidy on hill sheep in years when the hill sheep farming is considered to be in need of special help. For the purposes of convenience in forecasting these payments have been considered in conjunction with the deficiency payments on wool. It seems probable that the hill sheep farming areas are relatively more dependent upon wool than the other sheep farming areas. It seems doubtful whether the wool price or the hill sheep subsidy has much effect on the numbers of sheep kept, because numbers of sheep in these areas seem to be very weakly dependent on price. Taking those commodities which are dependent on deficiency payments for price support (namely grain, sheep, cattle, pigs, eggs) the subsidy seems to have been reasonably evenly distributed among different products over the period as a whole. The average rate was about 20 per cent. Of course the average rate can be made to look bigger by calculating it as a percentage of the market price as distinct from the price received by farmers. Likewise it can be made to look smaller in the case of livestock and eggs by including types of livestock not supported by subsidy such as culled cows, ewes and sows and overweight pigs or by including the eggs not channelled through the Egg Marketing Board. Eggs and wheat stand out as the

most heavily subsidized commodities. Oats had the least support. It seems clear that at the beginning of the period the standard price for oats was fixed too low relative to other grains, especially wheat. As the demand for feed grains was as important from the point of view of the foreign exchange position as the demand for cereals for human consumption, the government increased the basic price of oats and reduced that for wheat. Owing to the decline in the price of grain the average support rate increased over the period as a whole, meanwhile the rates for individual grains drew nearer together. It seems reasonable to conclude that an equal rate of support for grains is an aim of government policy. It is not so much that support has been directed towards feed grains because they were feed grains, but because support levels were initially low. In 1960-1 the rate of support on barley rose well above that on wheat so the standard price of barley has been reduced heavily at the 1961 Price Review. The actual support rate for grains as a whole rose somewhat during the period 1955-9, this was due to the fall in grain prices being unexpectedly rapid rather than to a deliberate intention to increase the rate of support.

The standard price for eggs was reduced sharply towards the end of the period in an effort to reduce the subsidy payments on eggs and avoid saturation of the market. There seems no reason to doubt that a rate of subsidy of 25 per cent. is higher than the government wish to see continuing. The fact that the subsidy rate is only 20 per cent. when estimated as a proportion of the total receipts for eggs by farmers is not likely to be a strong argument for leaving the subsidy at its present level. This merely gives the impression that quite a lot of egg producers manage quite well without subsidies; even if this impression is misleading it certainly does not present the case for a high subsidy in a favourable light. There is therefore likely to be a further effort to reduce the rate of subsidy in the next few years.

The rate of support for pigs has fallen steadily over 1955-9. The rate was obviously too high to start with. Recently it has been running at a rather low level and at the last two successive price reviews a small increase has been granted. It seems fair to conclude that the support rate of 10 per cent. is lower than the target rate of support. In 1957-8 the rate of support was running at about 20 per cent. which was comparable with other support rates, but the government imposed a large cut in prices. This was probably for two reasons: first, that an expansion of pig numbers was feared; second that the 20 per cent. rate was considered too high for pigs. The rates on pigs and eggs are not quite comparable with the rates on grain, sheep and cattle because the production of pigmeat and eggs are more like processing industries rather than primary producing industries. A rise of 20 per cent. in the price of pigs or eggs will have a much greater impact on the incomes of farmers in these industries than a rise of 20 per cent. in prices of grain or livestock. It will also be likely to lead to a much greater expansion of production and increased imports of feedingstuffs. Whether these associated effects are good or bad depends in what context one is thinking. It

is not unreasonable to think of a 15 per cent. rate of support for pigs and eggs as being equivalent to a 20 per cent. rate for other products. A forecast of the target rate for pigs for 1965 is 15 per cent. Similarly a low target rate for eggs seems appropriate for the same reasons. It would not be unfair to relate subsidy rates to value added rather than to total value of production in different sectors.

The tendency at price reviews over the last five years has been to increase support for sheep and cattle relative to other products. The increases have been relatively greater for cattle than for sheep. The support rates seem to be higher for fat sheep than for fat lambs. Some steps have been taken towards equalizing the support levels, but they do not appear to have been very effective yet. Rather more support for fat lambs may be given in future and rather less for fat sheep. In view of the encouragement that has been given to beef and mutton it seems unlikely that the government will reduce the rate of support before 1965. It seems reasonable to suppose the target rate of support will be highest for these two commodities. We will make several tentative suggestions as to why this should be so. Perhaps it is hoped that by supporting rather less intensive branches of farming the danger of surpluses is less likely to arise; perhaps a rather optimistic forecast of the demand for meat has been made; also cattle and sheep can be supported without the danger of running up a large bill for imported feed. A support rate of 20 per cent. for both cattle and sheep is reasonable as a target for 1965, but owing to recent large increases in the standard price for fat cattle, a 25 per cent. rate seems more probable. For wool a rather similar rate of support is expected: it may even increase if the method of supporting hill sheep by direct payments is abandoned. A payment of a premium on wool from hill sheep has been paid by the Wool Marketing Board; a small increase in the rate of subsidy may be necessary in order to persuade other farmers to allow this differential treatment to continue.

The support rate for milk, by deficiency payments, cannot be considered in isolation from the method used to support milk prices by splitting the market, or independently of the maximum prices permitted for the sale of liquid milk. The rate of subsidy fell sharply during the period because the fall in deficiency payments was paid for by an increase in the price paid by consumers for liquid milk. This increase was not too far out of line with other retail food prices and was made without any great change in demand. The deficiency payment now forms a very small proportion of the effective support for the pool price of milk. It seems likely that even this will disappear in time, and that by 1975 no Exchequer payments will be made. The main question concerning future prices is the effect of the expansion of supply on the pool price. This will be considered at a later stage and is of course closely related to the problem of the balance between supply and demand for liquid milk and milk products. In estimating the change in support rates for various products, the forecast deficiency payments for milk have been contrasted with the deficiency payments since 1957 - that is

compared with a 3½ per cent. rate rather than a 6.4 per cent. rate. Owing to the lower maximum price for liquid milk before 1957 a comparison between 1965 or 1975 with the whole of 1955-9 would be misleading. Small downward movements in the milk price are therefore forecast which are expected solely as a result of the withdrawal of these deficiency payments.

For potatoes the figure of 5.7 per cent. for deficiency payment cannot be considered as comparable to the rate on other commodities. The price of potatoes is supported by several methods such as acreage control, import control, variation of the size of the riddle for ware potatoes and purchase of potatoes by the Potato Marketing Board to support the price. The cost of these operations is not so large as the cost of deficiency payments on other products so far as Exchequer payments are concerned. Less subsidy is required per unit of effective support to farm prices. But the operations are costly in another sense, in that they increase rather than decrease the price paid by consumers. Hence a permanent rate of support for potatoes of more than 10 per cent. in the present context would be quite excessive. Intermittent high subsidy payments like that in 1954-5 are reasonable, but only as a result of exceptional circumstances. It seems reasonable to accept the present rate of subsidy as a target which represents government policy for now and the future. Reduction of acreage to meet any increase in yield or decrease in demand is a necessary condition for this level of support to continue. The disposals of ware potatoes for stockfeed by the Potato Marketing Board amounted to only 5 per cent. of total supplies over the calendar years 1955-9. In 1953-4 and 1960-1 these disposals were at a considerably higher level but this kind of wastage seems acceptable as normal for this kind of method of supporting prices. The assumption in forecasting will be that a similar rate of wastage (or disposals for inferior purposes) will be projected into the future; if yields go up somewhat and consumption goes down this wastage can be kept to a reasonable level without change of price of ware potatoes either by reducing acreage or by changing the riddle size. Both methods run into a considerable amount of criticism from farmers; we regard the changes in the riddle size as a short-term expedient rather than a long term measure to adjust production and so we think that the acreage will probably have to be reduced in the future. It may be that the riddle may be changed slightly so as to keep rather more ware potatoes off the market - especially outsize potatoes; but this is unlikely to balance the reduction of wastage of ware potatoes that will come from improved storage conditions. In short all the adjustment must come on the acreage quota.

In Table 9 the forecast level of support for 1965 and 1975 are given. The table shows a reduction in the overall rate which will be gradual. The government's intention to reduce exchequer payments will probably be rather difficult to achieve before 1965. There is some preference for cattle and sheep over other products. The most drastic cut in rate of subsidy is likely to be for eggs. It must be stressed that the changes in the subsidy rates

are not changes in the price that farmers may expect. These are obtained by a combination of the price changes in the end products on the free market and the rates of subsidy given here. But as a first stage in the analysis the effects of changes in the subsidy rates will be calculated on the level of production in 1965 and 1975. These changes might be considered as the effect of government policy towards agriculture; but of course the very fact that the changes have been estimated on the basis of rates of subsidy rather than standard prices means that the government's policy towards agriculture is bound continuously to take note of the balance between supply and demand. One aspect of the relative level of support for farm products which has received strenuous attention recently is the effect of the relative support level for different products on the incomes of small farmers. Shifts of government policy since 1949, starting with the abolition of the feed subsidy, have tended to reduce incomes of smaller farmers. The recent change of emphasis towards sheep and cattle has a similar effect. Small farmers' products are generally pigs, eggs, and milk; if they grow grain it would tend to be oats rather than wheat or barley. This picture is of course a simplification. It is difficult to discuss milk in direct comparison with other crops, except to say that the government's intention to avoid substantial deficiency payments on milk and not to encourage further expansion of production of milk for manufacture at present prices seems clear; and this will react more severely on the incomes of small farmers than those of large farmers. The actual level of support for eggs, pigs and oats do not seem to be very much lower than those for other farm products. But it seems to be likely that the target rates of support for eggs and pigs are lower than for other farm products in the long run. It has been suggested that this might be because their dependence on imported feed makes them less suitable for net savings of foreign exchange than other farm products, but this is probably not true for pigs, but is true for eggs at the present import levels. The chief reason for the lower target support rate for pigs and eggs is probably that a lower support rate is appropriate for a mainly processing industry: an equal support rate would in a sense be unfair, unless there were an equal tax on imported feed.

Given the intention of the government to shift the emphasis further away from pigs, eggs and milk, it clearly conflicts with the desire to support incomes of small farmers. Since there have been other measures introduced specially to help small farmers - the grants for capital investment and re-organization under the Small Farms Scheme - it seems probable that the government will feel free to continue this shift of emphasis. The forecast changes in the target rate of subsidy look quite consistent with the obligations of the government under the 1957 Agriculture Act. This cannot be stated definitely until a forecast of the prices of farm products has been made and related to feed costs. But even the cut for eggs seems to be quite practicable as the permitted rate of fall is 9 per cent. in the standard price over three years. A sharp upward movement in feed prices might create difficulties, as the standard price is related to feed prices. If our forecasts are

correct the greatest difficulty will be for the government to keep the target rates of support for sheep and cattle as low as 20 per cent. It seems likely that there will be a fall in the price level which is likely to cause a reversal of the shift of emphasis towards these products before 1965. In fact by 1965 there will probably be much less worry about the prices of small farmers' products as distinct from those of larger farmers and more worry about the level of prices in general. Even the modest changes in support rates which are suggested here may be much more difficult to achieve in practice than on paper.

Provisional Forecasts of Production including effects of changes in price of grain and oilcakes

We are now in a position to take the forecasts of production as far as they can be taken before considering inter-action of supply and demand. First in Table 10 we consider the effects of trend in yield and scale of production on the level of production for the main commodity groups. These changes in themselves are very large and require a rapid improvement on the technical side. They are certainly well within the bounds of possibility, but still appear a little startling. For purposes of comparison with past achievement some of the larger increases are given in Table 11 as a percentage of values in 1938. The achievement between 1938 and 1955-9 was itself very large; even when the effects of an increase of farm prices by about 30 per cent. in real terms is allowed for there is a great deal of the expansion of 50 per cent. in gross output (or even more if measured net of feed inputs) which can be ascribed to technical improvements. In fact it is probably fair to allow well over half the improvement to technical factors, associated here with trend and rather less to the economic factors and the support policy for agriculture. It is of course difficult entirely to separate the two. There seems to be every reason to expect that technical progress will in a general sense be as rapid from 1955-9 onwards as it was in the period 1938 onwards. In fact on the livestock side the war may well have hindered progress. Speaking generally the kind of progress that has been made does not seem to have reduced the opportunity for more progress. The gap between the most efficient and the least efficient farms in terms of output per acre is at least as large as it was in 1925. While some diminishing returns to fertiliser application on crops can be expected, the returns from application of fertiliser to grass appear to be only just beginning to be appreciated. Intensive methods of keeping livestock also seem to be developing more rapidly at present than in the past. If we are right in this assumption that (provided the general economic climate for farming does not change) a large expansion of output is inevitable then the rest of the structure of our forecasts falls into place as a response of supply, demand, imports and government policy to this major fact. It is because production is so clearly likely to outstrip demand with

this kind of technical progress that a mechanism for reconciling the two seems so necessary as a part of forecasting. In addition to the expansion of production due to technical progress we can consider here the effect of two kinds of price changes, namely those associated with changes in the subsidy rates predicted in the last section and those associated with changes in the prices of grain and oilcake. From study of the trends in population, income and production of feed grains and grains for human consumption at the international level we got no clear indication as to whether prices were going up or down. Provided that modest income increases take place in the poorer countries and provided that the increased demand for grain in these countries is not just localized - then there seems to be no reason to expect a decline in wheat prices. The feed grain situation is more difficult to assess, but even here we saw no inevitable decline in price. The fact remains that prices have declined since 1955. We did not feel sufficiently confident of our analysis of the international situation to say that there was bound to be a recovery to the 1955-9 price level. With oilcake too the price situation appeared to be uncertain. A balancing of the requirements of the world for oilseeds (based on study of the demand for fats and oils on the one hand and the trends in production on the other hand) suggested a moderately rapid expansion in supplies of oilcake and meal which should be adequate to meet a reasonable expansion in requirements for milk production and supplementary feeding for pigs and poultry. But the rate of increase in supplies cannot be expected to be as rapid as the rate observed over the last few years. Again from observation over 1955-9 we see that the real price of oilcakes and meal in 1959-60 was well below the real price over 1955-9 as a whole. Moreover, even the fishmeal prices which had kept high throughout the period 1955-8 have taken a sharp fall recently. The fall in the real price of protein feed has not been quite as sharp as for grains. What we finally decided to do was to prepare two sets of forecasts of production based on high and low prices for grain and oilcakes. In the low price forecast we assumed wheat and feed grain to have fallen 15 per cent. from 1955-9 to 1965 and 1975; while oilcakes fall by 10 per cent. in price and fishmeal similarly. For the high feed prices we assume a recovery of grain prices to their level in 1955-9 while oilcake and fishmeal prices recover to 5 per cent. above their 1955-9 level. The prices quoted must be considered as real prices so far as the U.K. is concerned - that is to say prices at port deflated by our retail price index. These changes in the price of feeding stuffs have immediate and obvious effects on the output of livestock products in the absence of other changes in price; they are taken into account in Table 10. Next we must consider their effects on government policy: in particular on the standard prices for grain, pigs and eggs. We do not expect the full force of a change in grain prices on the world market to be felt by grain prices within the U.K. A study from time series suggested that prices for grain within the U.K. would fall 7 per cent. for each 10 per cent. fall in imported grain prices and 3 per cent. for each 10 per cent. rise in home supplies. Substitution between English and imported wheat is imperfect owing to rigidity about possible proportions between the two types of

wheat in flour milling, special demands for English wheat in the biscuit trade, etc. English barley has a special demand in the brewing and distilling, but is somewhat less suitable for feeding. Hence competition with foreign barley is also imperfect. Likewise the competition of oats with maize is imperfect, oats having a higher proportion of fibre which is less suitable for some purposes and more suitable for others. Although these reasons for imperfect substitution are doubtless important they probably do not account fully for the conclusions from time series. Even taking into account special margins for barley for brewing and wheat for milling we could not quite see why grain prices should fall by as much as 3 per cent. for each 10 per cent. rise in production. As a supplementary consideration the timing of home produced and imported supplies will make substitution somewhat less perfect. The tendency for a glut after harvest will be more serious the larger the proportion of supplies provided by home produced grain. Whether these reasons all appear to be adequate justification or not we decided to allow a fall of 10.5 per cent. in U.K. grain prices corresponding to the 15 per cent. fall in imported grain prices leaving open the possibility that a further fall in prices might take place if home supplies - especially supplies of barley - increased too fast. Given the view that the government considers a certain percentage rate of support as a long run objective this means that the fall of 10.5 per cent. will be transferred to the standard price before 1965. This seems quite possible within the terms of the 1957 Act. In the case of those products which are tied to grain prices by a feed formula - eggs and pigmeat - no change in prices was made. Of course in the short run there is an obligation on the government to fix these prices with direct reference to production costs. In the long run we thought of a fixed rate of subsidy as the objective, the feedingstuffs prices only being important in that at the higher level of prices it would be rather more difficult to achieve a cut in rate of subsidy on eggs and still remain faithful to obligations under the 1957 Act. On the other hand lower feed prices will in any case lead to lower prices in eggs and pigmeat: the higher level of production can only be taken up at lower prices. The forcasts of production at high and low feed prices are entirely artificial in Tables 10 and 11. They do not include many of the normal reactions that are bound to occur. But we found the projections for 1965 and 1975 in Table 10 the best starting point before considering the demand situation. The forecasts marked P in Table 10 exclude any explicit consideration of demand. Some obvious modifications must be made at the outset. The large expansion of milk supplies must be met by a decline in the pool price of milk and a point at which the supply and the pool price are in balance must be found. The contraction of the potato acreage must lead to compensating adjustments in the supply of other products. All this requires explicit consideration of demand; and the supplies will clearly differ for different assumptions concerning population, income, etc. In Table 10 forecasts marked Q take into account reactions of the Potato and Milk Marketing Boards to the supply and demand situation under the

fairly optimistic assumption of a high population and a 2 per cent. growth in general productivity. Even with these adjustments it still appeared that agricultural output was likely to rise twice as fast as demand at constant food prices.

Provisional Forecasts of Imported Supplies, and Fish.

In the case of some products for which the imported supplies were not assumed to be entirely flexible provisional estimates of the supply of imports for 1965 and 1975 were made. These are comparable in theory to the projections of home supplies at constant prices. They were made from examining trends in production and consumption in exporting countries; and it was hoped that these forecasts would be independent of changes in price within the U.K. It was rather difficult making these projections independently of our knowledge of the demand possibilities in the U.K.; and there may be some danger that we have counted the estimated effect of future prices twice, first in the trends and subsequently in the adjustment of imported supplies in response to the price situation within the U.K. The commodities covered here are meat, milk products, eggs, fish, vegetables and fruit. A brief discussion of some of the reasons for these provisional forecasts will be given here. The forecasts themselves are given in Table 12; showing an increase in expected supplies of meat and fruit, and with some tapering off of supplies of milk products. The supplies of vegetables are not expected to increase much.

Meat supplies from abroad are expected to increase. The increase in supplies of mutton and lamb can be predicted with much greater confidence than the increase for beef and pigmeat. The expansion of flocks of sheep in New Zealand has been very rapid in recent years and the opportunity of selling mutton or lamb to countries other than the U.K. is limited, since U.K. imports take up 85 per cent. of the world trade. Some trade in mutton might be developed between New Zealand and Japan, but this seems more likely for 1975 than 1965. The possibility that Australia will also start to compete strongly for the U.K. market for mutton should also be considered seriously, but again this is more relevant to the situation in 1975 than in 1965. A breakdown of the provisional forecasts for mutton and lamb is given in Table 13 according to source of supply. The projections were originally based on data for 1954-8. The forecasts of total supplies do not appear unreasonable after considering totals for 1959 and 1960. Forecasts for Australia may be too high, while those for New Zealand may be too low; some countries other than New Zealand, Australia and the Argentine have started to export mutton and lamb to the U.K in a small way, but it is doubtful whether they will be able to keep in the market. The pressure of increased supplies seems inevitable. The effect of U.K. prices on these supplies will be considered later, but it will be less strong for mutton than for most other food supplies and will probably affect supplies from Australia and the Argentine more than supplies from New Zealand.

The forecasts of supplies of beef and veal are also based on 1954-8. They were made from consideration of production and consumption trends in Argentine, Australia and New Zealand; and from considering the possibilities of alternative markets. The tendency for consumption to outrun production in the Argentine has caused considerable concern to several governments in that country. It seems likely that the Argentine will try to maintain exports at the 1954-8 level, but that some diversion to the Common Market may occur. Supplies to the U.K. will probably rebuild to about 200 thousand tons in 1965 after falling considerably lower in the near future. The banning of imports on the grounds of foot and mouth disease is not expected: even if it does become feasible to dispense with supplies from the Argentine entirely.

Australian supplies of beef are expected to increase eventually. The present low level of imports is largely the result of diversion of meat to the United States. This market seems likely to be closed when cattle numbers in the United States recover. Although exports of cattle to the United States have taken place at the cost of some reduction in cattle numbers in Australia there is every prospect that these numbers will recover and continue to expand. Production of meat has increased more rapidly in areas which supplied domestic consumption, but it has also increased in Queensland, where supplies are chiefly for export. In spite of the rather low quality of Australian beef supplies are expected to compete strongly for the U.K. market especially for 1975. The expansion of pure beef cattle in New Zealand has been very rapid. Although at present only a small proportion of supplies are reaching the U.K. there will probably be a rapid increase in supplies in the near future if, as we expect, the production in the United States catches up with demand. In the normal course of events we expect the major proportion of New Zealand exports of beef will try to enter the U.K. market. Since 1958 beef imports from New Zealand have dropped sharply. This was not unexpected and is not inconsistent with our projections for 1965. The rise of the other importers of beef, like Uruguay, has helped to make up deficiencies of supply from New Zealand and Australia. The low level of imports from traditional supplies may have encouraged the emphasis at present being given to beef in the U.K. In our view imports are likely to recover; but we could easily be wrong in this view to the extent of anything up to 200 thousand tons. Much will depend upon the policy of the Common Market towards beef imports. At present their declared policy is to aim at self-sufficiency. If this policy is rigorously pursued then there seems every likelihood that supplies for the U.K. market will be more than adequate.

We expect supplies of pigmeat to increase. This is partly as a result of the natural tendency of Denmark to increase her supplies of bacon, and partly as a result of the concessions granted to Denmark as a part of her membership of the Free Trade Area. It seemed likely that Denmark would also try to compete in the pork market of the U.K. before 1965. It seemed reasonable to prepare two sets of supply forecasts for pigs - one consistent with the lower

feed prices prevalent in 1959 and 1960 and the other consistent with the higher feed prices over the whole period 1955-9. This treatment is consistent with that given to U.K. supplies of pigmeat. Supplies from Denmark during 1960 have already exceeded the lower estimate for 1965. But 1960 is considered to be an abnormally high year for imports of bacon, corresponding to a trough in the U.K. pig cycle. Supplies of pigmeat in general are of course highly sensitive to price. Danish production is probably a little less sensitive to price than production in the U.K.; but the exports of some marginal suppliers like Holland are highly flexible.

The imports of canned meat are, of course, inter-related with the imports of other meat. Since 1938 these imports have increased very much, but it is doubtful whether supplies will increase very fast in the immediate future. In the longer run there probably will be some increase because of the general trend towards packaged food. It would appear that Australia in particular would be able to step up exports of canned beef. There is probably some degree of substitution between supplies of beef from abroad and supplies of imported canned meat. It may simply happen that a decision is made to export beef in one form rather than another. Canned pork in various forms is also important and comes from many sources - supply is probably very flexible.

A small supply of poultrymeat from abroad is expected to continue. This may take place even in the face of a large increase in production at home. The trading arrangements with Denmark make it likely that the supply of small broilers from that source will continue.

We expect that at the kind of price level normal in the U.K. in 1955-9 only a trickle of eggs is likely to be imported. Recently most of these eggs were imported to fill occasional seasonal gaps between demand and supply; some, like the South African supplies, command a considerably lower price than the U.K. eggs and appeal only to a limited section of consumers. Occasionally during the base period eggs were actually exported from the U.K. in small quantities and this caused considerable protests about dumping which were clearly justified. However, because of our relations with Denmark, we cannot choose an effect of price on net imports which is very large in absolute terms: if we did this we would be obliged to forecast an export surplus which is politically unacceptable. Shell eggs only accounted for about half of the eggs imported, the rest arriving in the form of egg products - mostly casks of liquid eggs. The Egg Marketing Board also produces liquid eggs on a considerable scale, and an increased production aimed at driving the remaining imports of egg products off the market can be expected. It is one of the few devices open to the Egg Marketing Board for increasing prices in the context of the high level of production that has been achieved. We can therefore expect imports of egg products to reduce sharply by 1965 and disappear by 1975.

Fish supplies are generally expected to decrease. The rather unfavourable settlement of the fishing dispute with Iceland and the difficulties of the fishing industry in general make it unlikely that British landings will increase at the level of prices normal over 1955-9. Lighter catches and rising costs seem to be mainly responsible for the failure of supplies to rise at the present level of prices which is considerably above the 1955-9 average. On the assumption that prices drop back to the 1955-9 level we forecast a substantial drop in British landings continuing up to 1975. Meanwhile we expect the supplies of other fish of all sorts to increase. Foreign landings especially from members of the Free Trade Area will be exempt from the tariff of 10 per cent. which was normal over 1955-9; quick frozen fish imports are also likely to increase. Canned fish imports also are likely to increase since they were partially affected by restrictions until recently. The increase on imported fish supplies does not seem likely to balance the loss in supplies of home fish by weight, but will more than balance it in value. These are provisional forecasts at constant prices; but the average price of imported fish is expected to rise even with a freed price level, because recent restrictions were directed against the dearer grades of fish - especially salmon. Although forecasts of fish consumption are not strictly within our terms of reference, some mention of fish seems necessary in connexion with the demand for meat.

Forecasts of supplies of dairy products were made for the four main sources - New Zealand, Australia, Denmark and the Netherlands. It seems likely that supplies of butter from New Zealand would increase slightly at the expense of cheese; that supplies from Australia would fall somewhat and supplies from the Netherlands are likely to be diverted towards Germany. The problem was made difficult by the sharp increase in supplies over 1959 and 1960 from other suppliers - like Finland who were disposing of surplus butter in the U.K. market. Although these supplies were discouraged officially, it seems probable that this kind of dumping will occur from time to time in the future from various sources as the U.K. market is one of the few free outlets for butter. In general we do not expect a large expansion of supplies of butter and cheese at the prices prevailing over 1955-9. In particular the high supplies of butter in the last two years seem only likely to be maintained at higher prices. Often butter and cheese prices were not enough to cover production costs; the differences in some cases being very large. It is too much to expect all future supplies to be roughly at cost; but the differences should decrease. Numbers of dairy cows in many supplying countries are expected to stagnate at around their present levels. Increased production seems likely to come chiefly from increases in yield. Increased domestic consumption and diversion of milk products under international aid agreements seem likely to prevent a further increase in supplies of butter and cheese to the U.K. As far as other milk products are concerned the situation is complicated. The U.K. has been a net exporter of condensed milk and some other products and a net importer of cream and chocolate crumb. If the U.K. became a net exporter of all these

milk products it would probably lead to protests from several sources - especially New Zealand, Holland and Switzerland. The most likely outcome seems to be that the imports and exports will about balance; and that the Milk Marketing Board will be restrained from launching too vigorously into the export field. Expressing all imported milk products in gallons of milk at U.K. conversion rates some decline in supplies is expected. Again the certainty of this prediction is not very high, but we gained the impression that supplies were more likely to fall than rise at constant prices.

The supplies of fruit from abroad seem very likely to rise. It is not easy to say in exactly what form these supplies will come. One of the most rapid developments has been the increased supplies of concentrated fruit juices which are equivalent to a very large quantity of fresh fruit. Canned fruit imports are also likely to increase sharply. A study of citrus fruit production by the F.A.O. shows that a very large expansion of supplies can be expected. The supplies of bananas can also be expected to increase substantially. Taking all together we can expect a rapid and continued expansion of supplies on the U.K. market. This appears to be one of the forecasts of imports that can be made with some certainty.

The forecasts of supplies of tomatoes is rather more difficult. Imports of Dutch tomatoes have been discouraged somewhat by a recent increase in the tariff. But this does not seem likely to prevent supplies continuing to increase. Moreover, the Channel Islands - which for this purpose will be considered as a source of imports - are expected to increase their supplies under protection of this tariff. The general tendency for imports of tomato products to increase will probably continue.

Potato imports can be taken as constant in the long run but subject to sharp fluctuations. Against the background of a general decline in potato consumption it is unlikely that imports could gain much ground without some extra tariffs or quotas being imposed. The general tendency, however, is for new potatoes to form an increased proportion of total supplies. Since new potatoes form a greater proportion of the imports than of home supplies this would normally give an increase in the imports. But the extension of the new potato season backwards into early spring is being watched jealously. At present imports are allowed for old potatoes only when the government thinks they are needed; while new potatoes are subject to no quota restrictions but to a tariff. It seems possible that supplies of new potatoes in what is traditionally regarded as the old potato season will be made subject to quota or increased tariff rates. It will not be easy to make necessary reductions in the acreage quotas in the U.K. if imports of potatoes increase steadily. Balancing these considerations a constant level of supplies seems to be the only acceptable forecast.

Imports of vegetables other than potatoes or tomatoes cannot be expected to increase much in the near future. They consist mostly of onions, for which the demand will not shift much, and young

carrots. Nor are canned vegetable imports very important if we exclude canned tomatoes. Limited quantities of more highly priced vegetables reach the U.K. market and eventually imports of this kind of vegetable will substantially increase the level of imports. In terms of weight these increased supplies will probably not amount to much. In terms of value the increase may be fairly important and may make it difficult for the U.K. producers to increase profits much, from out of season vegetables and from glass house crops. At this stage however we are only considering supplies by weight.

It must be stressed that all these forecasts of imports are provisional. Imports are of course very sensitive to price changes in the U.K. if they are not balanced by changes in prices elsewhere. These provisional forecasts must be supplemented by a realistic e timate of their price elasticity of supply - i.e. the effect of the price level of these imports within the U.K. on their supply in the long run. The supply elasticities we have used are shown in Table 14. What we can say about these elasticities of supply cannot be supported by much quantitative evidence. Qualitatively we can say that the more important the U.K. is as a proportion of the world market for each commodity, the lower the elasticity of supply is likely to be. Also we can generally say that the supply elasticity of the imports is likely to be higher than for the corresponding home product. We did make a serious estimate of the elasticity of supply of many home produced foodstuffs and therefore cannot logically accept a lower estimate for the imported product. Some attempt was made to estimate elasticity of supply within Denmark, New Zealand and the Argentine for some products as an extra guide. The only product for which the supply elasticity could be put below 2.0 was for mutton and lamb. This is probably considerably higher than the elasticity of supply within New Zealand. The elasticity of supply of beef was put rather higher. For pigmeat we estimated the supply elasticity within Denmark as rather more than 2 and less than 3: it seemed reasonable to double this for those supplies reaching the U.K. market. The elasticity of supply of milk products seemed likely to be similar to that for beef, but some extra flexibility between cheese and butter must be possible. Elasticity of supply of fruit will be almost entirely due to diversion of supplies from other countries. The elasticity of supply of the growers is not large even over a fairly long period of time; but the share of the U.K. in the world market is lower for fruit than for meat so an elasticity of supply of a similar magnitude to beef was allowed.

Since a decline rather than an increase in egg prices was expected a modest effect of price on egg imports was adopted to ensure that there are no negative imports. In any case it would probably take quite a large fall in egg prices to eliminate the small egg imports completely. This small price effect is however large when measured as an arc elasticity based on a small volume of imports. If there were a serious rise in price and a large gap between domestic supply and demand should develop, this elasticity would probably be inadequate. But the elasticity does seem to be adequate for the forecasts actually made.

The supply elasticity for fish was not estimated from any time series but a figure of 1.0 seemed to be fairly reasonable for British landings and a figure of 2.0 for foreign landings and canned fish imports. These are long run supply effects which are assumed to apply to 1965 and 1975.

We cannot say that we have firm evidence to support any of these price elasticities of supply of imports or of fish supplies. But we cannot in fact escape making an estimate of their value if we are to make predictions and these are the values we have chosen. In 1975 we have chosen values which are 25 per cent. above those in 1965 for all imports. This allows for the tendency for the U.K. share in the world trade in foodstuffs to fall.

The Effect of Price on Demand

In the case of some commodities - mainly meat, fruit, vegetables and milk products - we considered that the influence of price on demand could not be neglected in preparing forecasts. The knowledge which we had of the likely size of price effects on demand for these foodstuffs, was generally limited to a rough idea of the size of the price elasticity of demand of some products with respect to their own price. These elasticities have been calculated from recent data by the National Food Survey[1] and from pre-war time series by Stone[2] and others. But even these direct price effects are not usually known with any great degree of certainty; our confidence in the results was not increased by further calculations which we made ourselves. The indirect price effects are known with much less certainty and many of the results which can be calculated are neither helpful nor significant. As soon as we start to consider the effect of price on demand for foodstuffs over a wide range of products it soon becomes obvious that we have to supplement the calculated results with a large number of cross elasticities between more or less remotely related products. We formed the view from analysing time series that the price substitution elasticity for all foods was only a little lower than the income elasticity - say about .30 at retail level. The elasticities of the products in which we were interested were mostly well above this figure. Only in the case of cheese and possibly eggs was the elasticity of demand for the product itself lower than .30. To calculate all the price effects independently in the context of a future where most prices are likely to fall rather than rise would tend to exaggerate the role that price could play in reconciling demand to supply. We have, therefore, made a complete set of estimates for the effect of price changes of 1 per cent. for the commodities in which we were interested, not only on their own consumption but on the consumption of all the other products. This statement of our opinion about

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[1] Op. cit. 1958

[2] Consumers' Expenditure and Behaviour in the U.K. 1920-38.

all these price effects is made in Table 15. Many of the cross effects are small and individually negligible, but we did not wish to ignore the possibility that in total they might be important. The analysis of demand is still a partial approach because we have omitted many foodstuffs - liquid milk, potatoes, sugar, beverages, cereals - where we did not think the price would change in the forecasts or where we did not expect it would have must effect if it did change; or where we had no clue as to the direction of the price change. The section of foodstuffs which we did consider is dominated by the meat group; fish and eggs are often considered as a part of this group and cheese also is sometimes considered as a cheap substitute for meat. Fruit and tomatoes were considered separately, but otherwise no division was made among fruits which include all processed fruit. Vegetables, other than potatoes, are given by weight and again without any breakdown within the group. Butter is really isolated from the other products considered because substitution is entirely with margarine whose price is not considered here.

Within the meat group we treated pigmeat as a whole in all its forms. But we have allowed it a lower price elasticity than other meats because so much of it is in bacon and other special manufactured products which are less immediately interchangeable with other carcase meats. The substitution of mutton with pigmeat is taken to be weaker than that between mutton or beef and pigmeat. Imported canned meat was considered more likely to compete with pigmeat and beef rather than with mutton which is not used so much for manufacture. One of the big questions concerning meats is the effect of the rising poultrymeat consumption on other meats. There is a general expectation of increased supplies of broilers at lower prices and some view of the price effect is necessary to see how far this trend can continue. We decided to take a fairly generous view of the price elasticity at present; perhaps such a large price elasticity as $2\frac{1}{2}$ places the credit for much of the sales promotion that has been devoted to poultry on the price effect. But it is difficult to separate the two causes, because it is very doubtful whether the sales promotion would be very successful without the fall in price. But we did fix the effect of a 1 per cent. change in price as an absolute amount of 5000 tons per annum so that as poultrymeat becomes more important and more comparable with other meats like mutton the price elasticities also will become more comparable. The commodities which seem most likely to suffer from a fall in poultrymeat prices are mutton, beef and fish. Since poultrymeat is often cooked with bacon it seemed wrong to assume any substitution with pigmeat in any case the low fat poultry meat will probably not substitute much with the high fat pigmeat. Special emphasis was given to the cross effect with mutton because poultry would probably tend to displace mutton in families of non-manual workers, where the preference is for mutton at present, but where a non-fatty alternative is desired. Also a strong cross effect with fish is given - not simply because poultry and fish are normally classed together in consumption data - but because of the light nature of both fish and poultrymeat and because the trade in

cooked fish seems likely to suffer with the expansion of trade in cooked broilers. For meat as a whole the price elasticity of demand seemed to be a little over a half.

The effect of a rise of butter prices on consumption is substantial: it is possible that we have under-estimated the long-run price elasticity at .60. It always appears that a corresponding decline of a similar weight of margarine consumption occurs as butter prices fall and butter consumption rises. The price elasticity for cheese consumption is small and the effect of meat prices on cheese consumption does not seem to be important either (although conflicting results can be obtained about this).

Among the fruit, vegetables and tomatoes rather weak cross elasticities were assumed. There seemed modest room for expansion of demand for all these three groups by weight as well as by value if prices fall. Taking all the specified foods as a whole the price elasticity at retail seemed to be rather more than for food as a whole. Even without assuming much cross effect with the other unspecified foodstuffs this is not unreasonable because we have concentrated very much on the foodstuffs which are more elastic with respect to price.

The next problem which we had to consider was the extent of substitution between home and imported produce. We were able to get very little guidance on this subject from calculated results - either those calculated by ourselves or those given by Stone. We did however extend the matrix of price effects given in Table 15 to a larger matrix given in Table 16. The two tables are consistent in that if the distinction between home produced and imported foodstuffs is dropped in Table 16 and a 1 per cent. rise in prices of both home and imported occurs together, Table 16 automatically telescopes into Table 15. But obviously Table 16 contains a larger number of assumptions than Table 15.

In the meat group we assumed that there were considerable imperfections in substitution between home and imported meats. The reasons for these imperfections are more obvious in the case of pigmeat and mutton than for beef. The greater part of the home produced pigmeat is for pork and sausage meat while imported pigmeat is almost entirely in the form of bacon. Even in the case of bacon it has often been suggested that the English and Danish bacon can be considered as distinct products. Our own analysis tended to show that the substitution between English and Danish supplies was fairly smooth, but the effective substitution between home produced and imported pigmeat cannot be considered smooth. The cross elasticity of demand between pork and bacon is not high enough; and the diversion of home produced pigs from pork to bacon and back is not perfectly smooth either. In the case of mutton and lamb the chief reason for imperfect competition is the timing of supplies throughout the year: English, and Scotch supplies being concentrated more on summer and autumn while New Zealand supplies are distributed throughout the year, but more important from February

to April. Some time series almost seem to show a complete independence of home and imported produce: others show a reasonable amount of competition. For beef the seasonal pattern is not so distinct and there is considerable uncertainty as to the labelling of imported beef: there seems no doubt that the description "Scotch" is a vague assertion of quality and may cover a variety of sources, including England and the Argentine. We do however expect an increase in supplies from New Zealand and Australia and other importing countries which will probably be of lower general quality than Argentine supplies and will probably have more difficulty in competing with English and Scotch beef. Time series analysis of recent years tend to support the view that competition is imperfect even for Argentine beef - in the short run at least - and we have accepted this view for the long-run also. The kind of cross elasticities adopted for home and imported meats follow roughly a rule that a 1 per cent. change in the premium on home produced over imported meat is associated with a 2 per cent. change in the ratio of home produce to imported supplies at wholesale level. Rather less elasticity than this is expected for mutton and lamb - rather more for beef and pigmeat. Imported pigmeat has been assumed to be less directly competitive with other meats than home produced pigmeat because so little of it is in the form of pork: home produced beef and mutton have been assumed to be in more direct competition with each other than they are with imported mutton and imported beef because home supplies of both beef and mutton tend to build up towards autumn. Otherwise we have tried to insert cross effects in a fairly neutral manner as between home and imported produce. Likewise the substitution of meats with home and imported fish have been filled in, in a neutral manner - although it seems rather likely that the canned imported fish will have different substitutes from the other fish, we could not pursue this matter. The actual substitution between home and imported fish must be less than perfect, first because of the large proportion of canned fish among imported supplies, second because much of the imported supplies are frozen.

Vegetables and fruit cover such a wide range of products that competition between home supplies and imports must be imperfect. Competition between home and imported fruit is chiefly due to competition between home produced apples and pears and imported oranges and bananas - not to direct competition between imported and home produced apples and similar direct relationships. A similar degree of competition between home produced and imported vegetables was assumed. The opportunity for substitution of home produced and imported tomatoes is also limited. First by the seasonality - imported tomatoes being available while home produced tomatoes are practically unobtainable over winter and early spring - second because the processed and canned tomatoes are almost entirely of foreign origin and likely to remain so. The substitution between home and imported poultry, eggs, butter and cheese was assumed to be perfectly smooth. Of course the imported and home produced supplies are distinct and usually clearly labelled for all these foods but the imported poultrymeat and eggs are relatively un

important and not worth extra consideration. The home supplies of butter are so small that there should be very little difficulty in securing a large increase in demand at lower prices. The only case where a fuller treatment of the home and imported supplies would be justified is cheese; but the substitution of New Zealand for English Cheddar is probably fairly perfect so the extra trouble was not taken.

For products not considered in Table 16 we have generally assumed interchangeability of imported and home produced products. For instance, we have made no distinction between home produce or imported fats or sugar on the demand side. But an exception was made in the case of home produced cereals. Here we assumed that in the context of a given world price situation, a rise of 3 per cent. in supplies of home produced grain would correspond to a 1 per cent. fall in prices of home produced grains owing to imperfection of the market. This was only partly associated with the special problems of substitution of home and imported grains for human consumption: the relationship applies to farm gate prices rather than to retail prices, and assumes much greater flexibility than for most of the products covered in Table 16.

Tables 15 and 16 cover the response of demand to price at retail. The effect of wholesale prices on demand can be considered to be considerably smaller. We did make many calculations from wholesale price data over the last few years and found this tended to be so - especially for fruit, vegetables and meat. In the case of eggs however retail and wholesale prices tended to move roughly the same proportion; and the distinction between per cent. changes of retail and wholesale prices was less marked for milk products than for fruit, vegetables and meat. In converting effects related to retail prices to effects related to wholesale prices we adopted the following rules:-

(1) Effects related to prices of carcass meat, fish, vegetables and fruit were marked down by 40 per cent.: this is roughly consistent with the view that there is a fixed absolute margin in the long run.

(2) Effects related to the price of canned meat were marked down by 25 per cent.

(3) Effects related to the price of eggs were left unchanged.

(4) Effects related to cheese and butter prices were marked down by 20 per cent.

Supply elasticities have been calculated at the wholesale level and reconciliation between supply and demand will be made at the wholesale level as a matter of convenience. The fact that the elasticities have to be marked down in so many cases of course reduces the role that changes in demand can play in reducing discrepancies between projections of supply and demand.

II

Reconciliation of Supply and Demand Forecasts*

We have, at this stage, prepared six alternative estimates of demand at constant prices based on two alternative assumptions about population and three assumptions concerning trends in productivity. Also we have alternative forecasts of home production and imports - one based on an expectation of the low level of feed prices obtaining in 1959-60, and another based on the expectation that they return to their 1955-9 level (or slightly more for high protein feeds). The production forecasts include consideration of changed subsidy rates on various products, while excluding the effect of changed free market prices except for grains. Clearly many more different forecasts of production could be made including more and less optimistic views on the rate of technical progress, government policy etc. We did in fact compile forecasts based on the theory that subsidies might remain at their 1955-9 rates or be abolished by 1975 - but neither set appeared reasonable as a base for forecasting. As it is we have 12 different sets of discrepancies between supply and demand for 1965 and 1975 for different combinations of assumptions.

It was decided to reconcile supply and demand forecasts by the price mechanism in the case of 21 commodities. The number would be much smaller if no distinction had been made between home and imported produce. In fact we dealt with home and imported meats, fruit, tomatoes, vegetables, and fish; with home produced wheat, barley, oats on the assumption that imported grain prices were given; eggs, butter and cheese were treated as if there were no distinction between home and imported produce (but separate forecasts will be made later). For all other products the forecast production and consumption has been determined entirely by demand or by some more arbitrary judgement.

The process of reconciliation by price is simple enough in theory. It may be illustrated by an hypothetical case in which one product (eggs) is considered to be in surplus by 1975, to the extent of 200 million dozen at fixed market prices for eggs. It is assumed that the rate of subsidy aimed at in 1975 is 12 per cent. and that this rate is independent of the price level - so any percentage change in the market price for eggs will be reflected in the long run by a similar percentage change in the subsidised price which the farmer gets. This

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*Table 20 to 43 relate to this section.

assumption that the rate of support will tend to a specific level is basic in all the reconciliation processes. For each 1 per cent. fall in the market price we expect imports to fall by 1.5 million dozen, home supplies to fall by 28.0 million dozen and demand by 3.0 million dozen. It is clear that the fall in price necessary to equate supply and demand is:

$$\frac{200}{1.5+28.0+3.0} = 6.15 \text{ per cent.}$$

and that most of the contribution to the reconciliation of supply and demand will come from home supplies. The expected fall in price to the farmers would consist of two elements. First the fall in subsidy rate of 13.2 per cent. already allowed for. Second the fall in the market price of 6.15 per cent.; the total drop being rather less than 20 per cent. It must then be decided whether such a drop is possible in view of the 1957 Agriculture Act. Since it only amounts to a fall in price of a little over 1 per cent. per annum it clearly is possible - especially under the low feed price assumption.

The problem is more complicated if we consider a case where supply and demand are inter-related with other products and where the home and imported supplies are imperfect substitutes. The simplest method to follow is to regard imported supplies as separate products where they are not perfect substitutes for the home products. Instead of a single estimate of the effect of a 1 per cent. change in the price of eggs on supply and demand, we now require a matrix of the effects of the price of each of 21 commodities on the demand for each (the prices being at wholesale level); and also a matrix that states the effect of a 1 per cent. change in price of all 21 commodities on the supply of each product. It is convenient in the supply matrix to consider as one the supply response of imports and home production to price where they are treated as a single commodity. (The modifications to imported supplies can easily be separated out at a later stage.) Given these two supply and demand matrices, provisional forecasts of supply and demand, and the services of an electronic computer, the fall in the 21 wholesale prices that would be required to eliminate the discrepancies between supply and demand can be calculated, as well as the final level at which supply and demand balance.

Unfortunately we could not cover all the products in this manner without some preliminary reconciliation of supply and demand to allow for changes in the price of poultrymeat; the demand for liquid milk and potatoes and the operations of their respective marketing boards. For poultry we felt it was easier to set a limit on the fall in price that could be expected than to forecast the level of production if prices remained constant. We thought that with improved food conversion rates and reduced margins on distribution we could expect a fall of 10 per cent. in retail prices by 1965 and 15 per cent. by 1975 at high feed prices, or by 20 per cent. in 1965 and 25 per cent. in 1975 at lower feed prices. As a first stage in re-

conciling demand to supply the consumption of other foods (especially meat and fish) were adjusted to allow for changes in the price of poultrymeat. The supply of poultrymeat itself was considered perfectly elastic moving towards the level suggested by demand at the lower prices.

With milk and potatoes the reconciliation is one of supply to demand. The liquid milk demand was taken as equal to the demand forecasts at constant prices. The real price level may change a little, but the quantity consumed will not change much as a result. In making forecasts we assumed that the present method of price fixing was to continue. Under this system a rise of 2 per cent. in the supply of milk tends to depress the pool price for milk by about 1 per cent. even if the prices of the milk for the various separate uses remains constant. We did make estimates of the fall in price that would occur if the 1955-9 prices for the milk used for liquid milk, butter, cheese and other milk products were maintained, demand for liquid milk and the other milk products met exactly out of home production; and the remaining supplies of milk divided between butter and cheese in such a manner that the increased supply was divided between the butter and the cheese in the ratio 2 :1. These provisional reductions in price are quite substantial and of course vary according to which set of assumptions we are using. For 1965 the provisional fall in price was near 8 per cent. with low feed prices or 4 per cent. with high feed prices. For 1975 the corresponding price changes were nearer 10 per cent. and 6 per cent. (but subject to more dispersion among the various population and income assumptions). These forecasts are however unnecessarily gloomy and owing to the interaction of supply with price only about three-quarters of these price reductions should occur - the remaining quarter being avoided by reductions in supply in the face of lower pool prices. The reductions are in addition to the price reductions suggested by the elimination of the direct subsidy to milk and do not allow for any possible price changes in milk or milk products. The quota system which has recently been recommended to farmers by the Government would of course produce entirely different results. It would certainly result in a lower level of supplies of milk in total. The proportion of milk not channelled through the Milk Marketing Board (which we have tacitly assumed to remain a small proportion of total supplies) would almost certainly increase and the surplus for butter and cheese would be much lower. Until details of the final scheme are available it is difficult to make any alternative set of forecasts. The fall in price that is likely to occur under the present system if it were maintained up to 1975 seems to lie between a quarter and a half per cent. per year; this is not likely to be welcomed by producers but may be considered a reasonable price to pay for freedom to expand production.

Next we must allow for necessary adjustments of the production of potatoes to the demand. We have already indicated that the so-called "equilibrium" acreage of 805 thousand acres and all production forecasts based upon it are entirely artificial, and in some measure the recent decline in acreage was dictated by quota restrictions, fines, etc.

imposed by the Potato Marketing Board.* Scarcity of labour may also be responsible. Interest in this acreage for the purpose of forecasting lies simply in the fact that it was more or less consistent with the other equilibrium estimates for 1955-9 on which the other forecasts of scale were based. The supplies necessary for meeting demand in 1965 could be produced from an acreage of very little more than this equilibrium acreage. Consequently no major additions to the scale of production of other crops seem necessary to allow for contraction of potato acreage by quota. For 1975 a reduction of acreage of 60 to 80 thousand acres below the equilibrium level will probably be necessary (the higher figure corresponding to the lower population forecast). For each 100 acres reduction in potatoes we expect other vegetables to increase by 20 acres, grain by 30 and the remainder to be used for extra grass and forage sufficient for increasing livestock by 5 cows, 5 calves reared and 50 ewes for breeding. Although the Potato Marketing Board can use other methods for equating supply and demand - such as changing the riddle size - acreage reduction is the most likely long run expedient.

The effect of the fall in milk prices and the increased acreage of potatoes of course entails modifications in the other production forecasts; just as the changes in poultry prices involved changes in the other demand forecasts. The discrepancies between these modified forecasts at constant prices can now be calculated and the further price changes for our 21 commodities calculated.

A matrix of the effects of prices on demand is given in Table 17. This is essentially an extension of Table 16 but at the wholesale level; it also includes certain special demand effects for home produced wheat, barley and oats in the context of fixed prices for imported grains. This matrix corresponds to the state of demand in 1955-9. We would expect the demand effects themselves to increase absolutely as the size of the market increases. We did in fact allow for changes in the size of the market that were caused by movements in the total population in subsequent calculations - but not for changes induced by income, price or population structure. Justification for this might be made by referring to the tendency for the price elasticity of demand for food to fall with reductions in price and increases in income; also it probably rises as the number of children increases. Considering the uncertainty attached to the elements of the matrix the allowances for population changes are rather trivial.

Next we must consider the effects of price on supply. We have already given our view of the effects of price on the scale of production and on milk yields. Estimates of the elasticity of supply of imports have also been made. In Tables 18 and 19 these two sets of estimates have been combined. In Table 18 the effect of price on the scale of production

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*Recent evidence tends to support the view that the decline in the potato acreage is mostly the result of economic factors and has only been slightly affected by acreage restrictions.

have been combined with yield forecasts for 1965, price effects for imported supplies are based on the elasticities given in Table 14 and the level of supplies in the base period. Rather small indirect effects of butter and cheese prices on supply of home production via the pooled milk price have also been allowed for. Somewhat larger indirect effects of prices of other farm products on supplies of butter and cheese have also been considered. The combination of the direct and indirect pricing mechanism has not been achieved with perfect logical precision; but is probably adequate. It was also assumed that some diversion of supplies of home produced milk between butter and cheese was likely in response to price movements. The supply response of home production to price is dwarfed by that of the imported supply in the case of butter.

The supply responses in general are higher for 1975 than for 1965. In the case of orchard fruit this is because there is inadequate time to adjust acreage before 1965. For other products it is because yields are higher in 1975 and price responses have been associated with the scale of production. For imports the effect of price has been assumed 25 per cent. higher in 1975 on account of the possibility that imports into the United Kingdom will form a smaller share of world trade in food.

Some mention must be made of the allocation of future demand between home production and imports in the provisional demand forecasts. In general we had no separate income effects for home or imported produce. In the cases where we had some indication of consumer preference from the breakdown given in Table 5 use was made of it. But in fact the evidence for a preference for imported fruit and vetables or for home produced meats is not strong. The forecasts of demand were generally made on the neutral assumption that a similar proportion of the home product will be consumed at constant prices. The "demand" forecasts given for home produced grains are of a synthetic nature. They are provisional estimates of the level of production of wheat, barley, oats, etc. that might reasonably be maintained without any fall in the average price for the British grain. This context is that the impact of changes in foreign grain prices have already been allowed for (a 1 per cent. drop in price causing a .7 per cent. drop in British grain prices), and that the imported prices remain fixed and the supply of grain from abroad perfectly elastic at these prices. Factors taken into account in fixing these provisional levels of demand were the expected uptake of English wheat by millers, the expected level of demand for barley by brewers and distillers, and the expected cow population in the case of oats. Obviously the forecasts of demand must be inadequate as the final demand for livestock feed is unknown. The purpose in fixing these provisional levels of demand was that the large changes in the pattern of grain supplies need to be balanced by some adverse and discouraging price movements. Even a rough provisional demand estimate will give us some indication of the size of these adverse movements. The degree of flexibility of demand for home produced grain is fairly large - a 3 per cent. rise in demand was considered likely to correspond to a 1 per cent. change in the average price of home produced grain if imported

grain prices are constant. It would require a relatively large error* of calculation in the provisional demand forecasts to make a substantial error in the final estimates of the production of grain.

In Tables 20-31 the process of reconciliation of the forecasts of supply and demand is finally made for 1965. Tables 32-43 cover 1975. The first column of the tables shows the supplies in 1955-59. These are generally defined as commercial supplies only, except in the case of eggs where all supply is included. In the case of butter and cheese all farmhouse production not covered by the Milk Marketing Board is excluded. Imports are considered net. Fruit, vegetables and tomatoes include all processed forms as fresh equivalents. Supplies of home produced wheat, barley and oats are simply harvested production.

In the second column we have the provisional forecasts of supply at constant prices. These include the adjustments for different subsidy rates, reactions of marketing boards, etc. that have been outlined so far. The third column shows the expected level of demand at constant prices for each product. Column four shows the discrepancies between supply and demand expected. As they tend, more often than not, to be surpluses these discrepancies are given as plus when supply exceeds demand and minus when demand exceeds supply. In presenting these discrepancies it is hoped that they will not be considered in themselves as advice concerning what ought or ought not to be produced. It may be quite reasonable for more of certain products to be supplied at lower prices than those prevailing in 1955-9 and less of certain other products at higher prices. The fact that beef is in surplus and butter in deficit does not mean that it would be wrong to encourage beef rather than butter.

The fifth column shows the reductions in price that are considered necessary to eliminate the discrepancies in column four. They are given as reductions because a positive sign in column four then corresponds to a positive sign in column five in most cases. In some cases where the indirect effects are very important, column four and five may have unlike signs. Column six shows the final reconciled estimates of supply and demand - which are of course indentical; the differences between the initial and final estimates being caused only by the price changes in column five. Usually this final estimate will lie between the initial forecasts of demand and supply But there are some exceptions - again where indirect effects are of great importance - imported beef in Table 20 is an example. The forecasts in themselves are final in that they are not subject to any further quantitative amendments, but they do require further detailed presentation and comment. The implications of the supplies of home produced livestock for the demand for imported grains has yet to be considered as a residual item. The forecasts must be checked against

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*There is no doubt that these provisional estimates of demand for grain are subject to errors and also to some inconsistencies. But the volume of work required to amend them would not be justified.

certain productivity standards and the implication of the suggested level of prices for farmers' incomes considered. But none of the changes appeared to be absolutely impossible or in conflict with declared policy.

Perhaps the most controversial result is the low forecast for the market price of beef. There are perhaps some obvious safety valves which will prevent such a large decline in price. We may have under-estimated the flexibility of demand between home and imported beef - a reduction of 10 per cent. on the premium for home produced beef may be excessive. There is also the possibility that a considerable export trade in live cattle to Europe will again develop. Although much of the trade in fat cattle which took place in 1956-7 could be described as dumping it did not provoke such strenous criticism as other forms of dumping and may well be allowed to revive since the Common Market countries expect to be short of beef.

III

Final Forecasts of Home Supply, Imports and the Pattern of Demand*

Forecast of Situation of United Kingdom Agriculture 1965 and 1975 with reference to costs and income

After the reconciliation of the supply and demand forecasts we are in a position to consider the future level of prices and production in the United Kingdom; to see whether they are consistent with government policy on agricultural support costs and farm incomes; to compare the increased value of production with rises in costs that are likely, and to check whether the productivity improvements which are forecast are possible. First we must make a reasonable assessment of the demand for feedingstuffs which is involved in the production of livestock products. In Tables 44a and 44b we have translated back into livestock populations and acreages the reconciled estimates of supply of United Kingdom agriculture. In order to simplify the results the picture is only given for high population and low income assumptions. The alternative assumption of high or low feed prices makes more difference to the pattern of production than the assumptions concerning income or population. The structure of livestock

*Tables 44 to 58 relate to this section.

population is given in Table 44a. Increases in all kinds of livestock are generally expected. A reduction in the mortality among cows is likely to make it possible to economise on replacements for the dairy herd, while a reduction in the level of store imports will mean that the cattle over 2 years class will not rise quite as fast as other younger cattle numbers. Although allowance is made for milk and beef production in the estimation of grazing requirements, they can be expected to rise faster than the corresponding grazing units. Likewise the increased lambing rates assumed and the continued decline in wether sheep make the grazing units for mutton and wool production rise less quickly than the production of mutton and lamb. In fact the proportion of directly productive animals will tend to increase somewhat. Nevertheless, the grazing requirements do increase substantially for 1965 and 1975. Even if the weighting of different livestock units were substantially different from those assumed in Table 44a this result could hardly be challenged. By grazing we understand all kinds of feed which are not concentrated. Hence oat straw, root crops, hay, etc., make a contribution to the supply of "grazing". The major cost of United Kingdom agriculture is the concentrated feedingstuffs. If we include the concentrates retained on farms and those used by livestock off farms (mostly poultry) then the quantity used in 1955-9 was about 14 million tons and can be expected to increase with expanded production of milk, meat and eggs. But the figure of 14 million tons is considerably in excess of what is required for production in most technical studies, and there is no doubt room for considerable economy. It is rather difficult to make a precise allocation of the current feedingstuffs total among the various classes of livestock. The assumption of technical efficiency in any one group would certainly do a grave disservice to others. It is also difficult to assess the share of grazing and concentrates in the production of milk. We have assumed that grazing and concentrates are responsible each for half of the production ration; the concentrates being used for milk production have certainly not been overestimated but should be more than sufficient to cover half of the milk produced. The share of concentrates in beef production is equally uncertain and includes some concentrates fed to cows to produce milk for calves. In these two groups there is always the possibility of direct substitution between grazing and concentrates, but in the other livestock groups there is practically no room for substitution. Provisionally it was decided to keep the requirements of concentrates and grazing separate; then to assume steady and gradual reductions in the requirements of concentrated feed per unit of output which should not be so rapid as to conflict with current technical possibilities. The rate assumed was a half per cent. for milk; this is certainly within the bounds of possibility and the shift towards production of milk during summer will help to achieve it. The only reason for not putting the requirements even lower was that the yields of cows are expected to increase and the maintenance of a fixed proportion of grazing and concentrate requirements in this context represents a considerable measure of economy in concentrated feed (which is supposed to correspond to production over and above a certain basic level). The rate assumed for egg

production can be largely accounted for in terms of the increased yield expected, with proportionate reductions in the maintenance costs in feed per egg produced. The reduced feed costs for broilers and the increased proportion of broilers among the total poultry are responsible for the rapid increases in efficiency of conversion for poultrymeat. The conversion rates for pigs can hardly be expected to reduce so rapidly, but here too the improvements are certainly well within conversion rates that have been achieved. No improvement is considered likely for beef: any tendency towards economy will be more than offset by the movement towards production of beef in the first half of the year to displace imported supplies. A slight increase in concentrate requirements for sheep* is allowed: the practice of supplementary feeding is becoming much more common, but is not likely to make serious inroads upon supplies. This increase will be offset by a decline in the grain requirements of horses.

In many ways we feel less certain concerning the breakdown of concentrates among the various branches of livestock in the base period than for the forecasts of feed consumption as a whole for 1965 and 1975. Even fairly substantial errors in the distribution would probably have a fairly small effect on the final demand for feed. The general pattern is clear - an expansion in demand in spite of economies in use. We are certain that it would be misleading to substitute a technically "correct" estimate of the requirements of feedingstuffs and compare it with the observed use in the base period. Something near this approach was made for the broiler industry; but for the more traditional branches of farming it seems quite out of place. Table 44a shows the provisional requirements of concentrates with a breakdown between high protein feeds and cereals. A large proportion of the increased demand for cereals will be met out of increased United Kingdom production; but there is practically no production of high protein feed from within United Kingdom agriculture. A little dried skim milk and beans are all that can be listed. There remains the possibility of further substitution between concentrates and grazing, but this must be considered in the light of the available land.

In Table 44b we have a forecast of the pattern of land use. The expected decline in the total area for agriculture is about about .1 per cent. per annum. This will be diverted to roads, buildings, etc., under existing plans. The total cereal acreage may increase or diminish according to the assumptions concerning the price level of imported grain. The area of forage crops in general will almost certainly decline. The high labour costs associated with them make this almost inevitable, unless there are some

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*It seems clear in retrospect that we have underestimated the concentrated feed requirements of sheep in the base period - probably by about 16,000 tons. This will have very little effect on the final forecasts of feed requirements - but it represents a serious error concerning sheep husbandry.

remarkable technical improvements suitable for small holdings. Kale seems to be the only exception; direct grazing being possible and increasingly popular. The sale crops will probably show some overall decline in acreage and the practice of bare fallow will probably decline still further; although even now it appears to be a variable residual due to changing sowing conditions and hardly a planned part of any rotation.

There seems to be some room for expansion of the total grazing area under assumption of low feed prices for 1965. Otherwise the total area of grazing will decline. The requirements of land for building and roads are not likely to affect the supply of rough grazing and the more productive grassland will be affected most. The trend towards temporary grass seems likely to continue, and the higher yields of leys will compensate for the loss of intensive forage crops. In Table 44b the number of available grazing units is calculated for 1965 and 1975 at fixed rates of utilization or yield. These are then contrasted with the grazing units required. An increased yield or use of the grazing and forage of 10 per cent. is required for 1965; while a much smaller increase of 7 per cent. is required from 1965 to 1975.

Evidence concerning past trends in the productivity of grassland is difficult to separate from evidence concerning the efficiency of conversion of livestock for concentrated feed. Study of the available time series for 1924-58 suggested that the productivity of forage crops as a whole did not increase by more than .7 per cent. per annum - apart from changes in structure due to an increased proportion of temporary grass. Efficiency of conversion by livestock of concentrates may have also improved by .3 per cent. But the time series could barely support both these rates of improvement. Technical experts in grassland talk in terms of improvements that are very large - so large indeed that they could not be achieved without a major economic upheaval - and we have already suggested improvements in economy of feedingstuffs which add up to more than .3 per cent. per annum. There seems to be no doubt that sufficient technical advice will be applied so that the trend improvements will be exceeded. The estimate of 10 per cent. improvements by 1965 seems reasonable. A fairly modest increase in the fertilizer application would certainly be sufficient to increase the yield by this extent on both temporary and permanent grass. Similarly for forage crops there is no doubt but that the fertilizer applications are well short of the optimal level and increased yields of at least 10 per cent. can be easily achieved. More doubtful is the assumption that these increases in production of forage can be translated into animal products without some loss in efficiency of conversion. But as the changes we are assuming are gradual there is every possibility that they will be. In fact the difficulty lies not so much in trying to explain why the yield of grazing should increase by 10 per cent. in 1965, but in explaining why it should not increase by a further 10 per cent. by 1975. For this reason we considered it likely that there would be further displacement of concentrates by grazing between 1965 and 1975

and that this would amount to 400 thousand tons. This is much less than the corresponding quantity of starch equivalent that an extra 2-3 per cent. increase in grazing would contain; but a perfect substitution between grazing and concentrates in terms of starch equivalent does not appear to make economic sense; it appears seriously to underrate the difficulties which are faced in making the substitution in practice. The savings of a further 400 thousand tons of concentrates must be considered large in relation to the sections in which substitution is possible - amounting to about 8 per cent. of the current use of feed for beef and milk. To expect an economy of more than this in addition to the 9 per cent. already assumed for milk, and in conjunction with a rise in yields per cow of 18 per cent. or more would be straining technical progress in the dairy industry too far.

It may well be technically possible to carry the existing livestock population on half the land or to reduce the use of feed from 14 to 10 million tons without loss in output of livestock products. It would be difficult to estimate the incidental costs of carrying out such a transformation; but all that can be said here is that it seems unlikely to happen. The moderate improvements in Table 44 in efficiency of conversion of feed and productivity of grazing are small set against such a background; but they are sufficiently large to be of vital importance to all our forecasts, and we consider them to be reasonable.

In Table 48 the level of use of some inputs are considered. In preparing this table the definitions follow those of the official net income calculations in the case of labour, machinery, rent and interest and fertilizers. But the feedingstuffs are expanded to include all feedingstuffs used in the United Kingdom and the livestock trade includes the whole of the trade in fat and store cattle except the exports of high quality breeding cattle. Roughly speaking in the base period our exports of fat livestock balanced the imports of fat cattle for immediate slaughter in value and exceeded them in number. The figures exclude any marketing services. Nor does the list of inputs claim to be complete. Seed costs and sundries have been omitted. The price, quantity and value of each input has been given as an index based on 1955-9. The price, quantity and value indices for all these costs are also all weighted by costs in 1955-9.

The price of feedingstuffs was assumed as predetermined by the level of world prices and the method of assessing the quantity used has just been described; hence the value can be obtained by straightforward multiplication. This method ignores possible qualitative improvements in feed which will be discussed in a qualitative manner later. The price of fertilizers was espected to fall. The cost given in Table 48 corresponds to the total price paid. On lime, nitrogen and phosphates there is also a considerable rebate or subsidy payment which is fixed on an absolute basis for nitrogen and phosphate and on a percentage basis for lime. It seems reasonable to expect that the absolute subsidies will be reduced somewhat as the total cost of fertilizer drops and that the fertilizer subsidy which

was about £35 million in the base period will increase in proportion to the total value of fertilizer used rather than in proportion to the total quantity, so the price index given should be a fair indicator of the price facing farmers also. Partly owing to the reduction in cost and partly owing to the general trend towards using more artificial fertilizers we expected that the quantity of fertilizers used would rise considerably. Indeed this is a necessary condition for the yield increases that have already been assumed for crops and grassland. The nitrogen requirements were expected to increase by 50 per cent. by 1965 and 95 per cent. by 1975, potash by 25 per cent. for 1965 and 46 per cent. by 1975, phosphate by 3 per cent. for 1965 and 17 per cent. by 1975. Lime was expected to move up in line with the general increase for other fertilizers. This would be necessary partly in order to balance the increased applications of nitrogen and some increase in liming seems desirable in order to balance the increase in milk production. A large increase in fertilizer application to cereals is expected for 1975, probably in conjunction with further developments of breeds of cereals which respond well to heavy fertilizer applications. The expected increases in fertilizer application are, however, only sufficient in themselves to account for about half of the yield increases assumed. Only slight increases in fertilizer application to sugar beet and potatoes are expected. By 1975 we expect the temporary grass to be fertilized as heavily as the cereal crops are at present, while the permanent pasture would be fertilized as heavily as the temporary grass is at present. As indicated already the increased applications of fertilizer should be more than sufficient to cover the increased yield expected for grazing and forage crops. But increased yields of sugar beet and potatoes depend chiefly on other factors. The expansion of fertilizer consumption is an integral part of the forecasts we have already made. By 1975 the bill for fertilizers will be up by about 25 per cent. and the actual quantity used up by over 50 per cent. The forecasts concerning labour and machinery costs are less directly related to the forecasts of production. But it seems likely that trend of labour off the land will continue at the rate of 2 per cent. per annum. (If anything this represents an acceleration of trend rather than a check.) To a certain extent this labour is likely to be replaced by labour saving machinery - chiefly by an increase in tractor attachments, since the number of tractors is not likely to increase. Probably more often economies in labour will be achieved by a simplification of the pattern of farming, and by more convenient buildings, etc. We can hardly expect the number of farmers to decrease as fast as the labour force. A decline of as much as 1 per cent. per annum in the number of farmers must be judged as a rapid decline by comparison with past trends.

There is great uncertainty as to the actual number of farmers in the United Kingdom and in the changes that have taken place recently. The number of "holdings" in the United Kingdom has reduced by about 1 per cent. per annum since 1950, but the number of holdings is only vaguely related to the number of farmers. It is probable that the number of farmers would decrease faster under the assumption of high feed prices than under low feed prices. A reasonable view

might be that we could expect a decline of a half per cent. per annum with the low feed price assumption and 1 per cent. per annum with the high feed price assumption. Most people who have studied the farm size problem from a technical angle would desire a faster rate of decline. If we define labour productivity in agriculture as the output net of agricultural inputs divided by the total manpower in agriculture we arrive at a productivity increase of near 5 per cent. at simple interest rates up to 1965 and through to 1975 (or 4 per cent. up to 1965 and 3 per cent. after 1965 at compound interest rates). This may appear a little too rapid - certainly more rapid than the expected improvements in productivity over the country as a whole which formed the basis of our demand estimates. But it is not unreasonable to expect agriculture and manufacturing industry to keep ahead of the rest of the economy. The increase in productivity of the manpower would of course be smaller if the output were measured net of machinery and fertilizer inputs. The price of labour is of course expected to rise. It seemed reasonable to increase the price of labour in line with the real expenditure per head in the community as a whole. Wages in agriculture would be expected to remain below the level of wages elsewhere and this would partly account for the expected outflow of labour from agriculture.

The level of rents is expected to rise. It seems reasonable that a rise of at least £30 millions would occur when the effects of the changed policy on rents in the 1957 Agriculture Act have worked themselves out. But owing to the lower prices of farm products and the meagre increase in farm income expected, a slightly lower increase in 1965 is reasonable when feedingstuffs are cheap. For 1975 rents may increase somewhat further and spread out a little according to the level of farm incomes. The quantity represented by the rent and interest charge in the official net income calculation is assumed unchanged. The area of land represented by the rents will decline slightly; the interest charges will probably increase, and the buildings and other facilities included in the rents will probably increase in value. It may be that the increased rent bill will be accompanied by an increased outlay by landlords. In fixing the price of land and the level of rents at a similar level we may have done less than justice to the part that the landlords will play in the increased production.

Although the list of inputs and costs in Table 48 is incomplete it provides a basis against which to set the increased production and lower prices expected. In Tables 46 and 47, the indices of quantity (Q), price (P) and current value (V) of the crop and livestock products are given. Again the list is not quite complete, but the omissions are not expected to be of very great importance. The most important are flowers and nursery stock which will probably increase in importance and flax and linseed which will have disappeared. The production of grains and the value of the production has been estimated in total, while the output only of fruit, vegetables and other crops has been considered.

Partly owing to changes in subsidy and partly owing to lower prices at market level the price for barley and wheat are expected to fall. The price of oats should be relatively favourable, but the production will probably fall. The value and quantity of grain produced is practically insensitive to all the major assumptions concerning population and income within the United Kingdom. This is due to the push and pull of many indirect effects cancelling out. Pulses for fodder are not very important and will fall in total value if not in price. All the increase in sugar beet is expected to come from higher yields from a fixed acreage. Since the present acreage quota is over-subscribed, the government will probably take any favourable opportunity for reducing the real price a little and the value of production will probably fall a little by 1965. The returns to potato growers for a reduced quantity of potatoes are also likely to fall. The value of dried peas for human consumption will fall by more than half - mostly due to a fall in production. The production of tomatoes is expected to fall by 1965 and then rise again somewhat for 1975, but the price of English tomatoes is expected to increase steadily up to 1975 owing to a strong demand. The value of other vegetables produced is expected to increase owing to an increase in quantity consumed. The price is expected to be more or less similar. The value of all the vegetables produced including potatoes does not seem likely to increase much. But no allowance has been made for possible increases in value due to quality improvements. These are likely to be considerable within the class of "other vegetables" and may amount to as much as £2 millions by 1965 and £4 millions by 1975. But we will discuss these quality improvements in more general terms later. The intention is, in Tables 45, 46, 47 and 48, only to present the value of agricultural production as a (price) x (quantity) change. The only consideration of quality is in the breakdown shown in the tables - which is not very detailed.

The value of fruit produced is also expected to increase - owing to a rise in quantity rather than price. The value is highly sensitive to assumptions concerning incomes. Again improvements in quality have been ignored, which are certainly likely to be important. The quantity and value of hops are expected to increase more or less steadily.

The price of crops as a whole is expected to decline - rather more on the assumption of cheap imported grain, but by less than the price of livestock products. This is reasonable in view of the high labour costs involved in producing fruit and vegetables, sugar beet and hops. The quantity of production is expected to rise steadily; chiefly on account of the increase in barley, fruit and other vegetables. The value of production is not expected to rise much under the assumption of low prices for imported grains and may even fall up to 1965. For 1975 the value of crops may rise by as much as £70 million with a favourable combination of assumptions on price of imported grain, income and population.

The price, quantity and value of livestock products are considered in Table 46. The quantity of milk produced has been assumed to move roughly in proportion to the sales through the Milk

Marketing Board. The value of output, which includes some production of farm butter and consumption on farms, has likewise been assumed to move in the same proportion. These assumptions are fairly reasonable in the context of a similar pattern of marketing as prevailed over 1955-9. They are less reasonable in the context of a quota system for milk production which must now be considered as a distinct possibility. Such a change would of course have a marked effect on the other forecasts of production. The value as well as the quantity of milk production would probably be lower. The quantity of veal produced would probably rise from 20 to 40 thousand tons as a result of an increase in weights of calves slaughtered. The production of mutton, wool and grain would be somewhat higher and the quality, if not the quantity, of beef supplies would be higher. It is not reasonable to give more than a qualitative picture of a scheme whose details have not been announced. But the total effect on farm incomes would probably not be very great. The pattern of livestock production given is of course strictly dependent on no quota system for milk being introduced.

The production of veal is expected to remain at about the same level of 20 thousand tons as in the base period. The number of calves slaughtered should remain at a similar level. There is a possibility that the average weight of the calves might rise if the feeding of dried milk products rather than whole milk for veal production is adopted on a considerable scale. It seems more likely that the possibilities of veal production will continue to be discounted by the majority of farmers. The production of cow beef seems likely to fall somewhat; in spite of an increase in the size of the dairy herd, a combination of factors will probably increase the average length of life of cows to nearly five years in the herd. The end of culling to clear reactors under the T.T. and attestation schemes, the reduction of losses directly due to T.B., the absence of direct support for the fat cow price, and a general improvement in the health of herds, seem sufficient reasons for expecting this change. The production of fat cattle is expected to increase by about 25 per cent. by 1965 and more slowly thereafter. The contribution of cattle imports to this production is not expected to increase. In spite of the improvements in quality of production (judged by the increased proportion of fat cattle) the value of the production of beef and veal is only expected to increase by about 10 per cent. by 1965, even with an increased degree of government support. The profit from beef may be higher if the development of an export trade of fat cattle to Europe is possible, or if beef supplies on the world market are scarcer than we expect them to be. The prices of fat cows and veal are expected to move in line with the unsupported prices for beef; any relative fall in demand for cow beef being balanced by reduced supply.

The price situation for fat sheep and lambs is likely to be worse than for beef - chiefly because less government support is expected for 1965 and also because of displacement of mutton

consumption by poultry. The increased quantity of production would certainly be greater without the fall in price. The price for fat ewes is expected to fall a little more than for fat sheep - the demand being very limited even for low grade manufacturing purposes. Wool prices however are likely to be maintained - with a similar rate of support and similar market prices. The wool production has been taken inclusive of wool pulled from skins of lambs and sheep slaughtered. The actual wool clip is not expected to increase quite so fast. The total value of mutton, lamb and wool is expected to rise somewhat by 1965 and substantially by 1975. The production of pigmeat is expected to rise only slightly by 1965 at rather lower prices. These price reductions are chiefly due to a reduced degree of government support (although higher subsidy rates are expected than those prevailing recently there will be less support than over the 1955-9 period as a whole). They are not very serious reductions in price if the costs of feed are taken into account. The prices of fat sows are expected to suffer less as they are not dependent on government support and the demand for manufacturing purposes should be reasonably strong. The effects of the end of the tariff on Danish supplies have been taken into account. From 1965 to 1975 the home production of pigmeat will make some headway against Danish competition, but the total value of pigmeat produced is not expected to rise much in 1965 or 1975 even under favourable assumptions.

Egg production will continue to expand, but at a more moderate rate, in the face of substantial cuts in price. The price cuts must be considered in conjunction with the level of feed prices, but the egg feed ratio is also likely to fall substantially. Since egg prices are geared to feedingstuffs prices in the price negotiations, a reduction of 12 per cent. or so in the standard real price for 1965 would appear to be adequate - much of this reduction has already taken place. The value of egg production is unlikely to increase substantially, except under rather favourable assumptions for 1975. The complete domination of home supplies on the United Kingdom market must continue, unless there is some radical change in the system of support, as might occur if Britain were to join the Common Market.

The quantity of poultrymeat produced is likely to increase very rapidly - doubling by 1965 and rising by 150 per cent. or thereabouts by 1975. The main increase in supplies is of course in broilers and to a lesser extent turkeys. The forecasts are sensitive to income assumptions (but not to population differences) and much of the increase in consumption will have been purchased by lower prices. The co-operation of the distributors has been assumed in achieving lower prices at retail level by working more or less on fixed percentage margins. In spite of this co-operation it is doubtful whether the total receipts from poultrymeat will double by 1975.

The production of both eggs and poultrymeat includes a substantial quantity produced off farms. Any increases in income

or costs from this source will of course be shared between farmers and others. Forecasts of the value of production and costs have been made to include non-farm production, but an arbitrary adjustment is made to allow for this in estimating farmers' incomes in Table 45.

The total value of livestock production is expected to rise by less than 10 per cent. by 1965 and less than 20 per cent. by 1975. The value is moderately sensitive to changes in population and income. The quantity of livestock products produced is sensitive to different assumptions concerning income and the price of feedingstuffs - but less sensitive to different assumptions concerning population. The quantity of livestock production will probably increase by 20 per cent. by 1965 and by 33 per cent. by 1975.

The value of the total production of crops and livestock is shown in Table 45 together with the implications for the costs of support and the level of incomes of farmers. The cost increases rise only slightly less than the value of receipts for 1965. Differences between the value of receipts and the rise in costs for 1965 under different assumptions are irregular and probably owe as much to rounding errors as other factors. Differences for 1975 show a reasonably logical pattern - rising with income and falling with population and showing a rather greater improvement with low feed prices than with high feed prices. The cost of support for agriculture in the form of direct deficiency payments is expected to fall slightly by 1965 and substantially by 1975. The degree of support, measured by the ratio between value of production and deficiency payments, will fall even faster. The burden of support costs for 1965 will shift towards beef and away from pigs, eggs and wheat.

Further increases in production grants are expected by 1965. If our view of the beef price-supply situation is correct, calf subsidy payments will probably rise to about £20 millions and then be cut back to about £16 millions in 1965, by a reduction in the rate per calf, to the average 1955-9 level. The hill cattle and sheep subsidies will probably remain at a similar total. The small farm scheme which involves a considerable outlay on production grants should be terminated before 1965. The outlay of capital equipment and advice in this scheme will play its part in the sharp increase in production of livestock products expected for 1965 - especially milk and eggs. An increased expenditure on the general farm improvements scheme is expected for 1965; it may reach £8-12 according to the level of livestock production. Generally it seems reasonable to expect the production grants to be higher in the context of lower feed prices, especially if these are associated with a less rapid decline in the number of small farmers. It appears that the deficiency payments are more likely to be high in the context of high feed prices under the assumptions that we have made concerning fixed rates of subsidy. This is also reasonable from the intuitive point of view since the standard prices for pigs and eggs are tied to feed prices; and the costs of feedingstuffs generally are taken into account at successive price reviews. The fertilizer subsidies are

expected to increase to nearly £40 millionsby 1965 and over £40 millions by 1975. We are logically committed to these increases in that any drastic retrenchment would cut some of the ground from underneath the yield increases that are expected. It seems probable that there will be some retrenchment in production grants before 1975 - the most obvious choice would be the ploughing up grant which costs about £10 millions a year. On account of the narrow increase in farmers' incomes that is forecast for 1965 it is difficult to see any serious retrenchment in the production grants before 1965. In fact the total cost of agricultural support seems only likely to fall a little - say about £20 millions out of a total of £238 millions (excluding administration, etc.) - in the base period. For 1975 some further progress appears possible without involving any serious damage to incomes of farmers. A fall of £50 millions from 1957-75 may be considered a modest reduction.

The actual productivity increases in agriculture which we have assumed are fairly consistent with the view of the Ministry of Agriculture that at fixed costs and prices farm incomes could be expected to increase by about £25 millions a year. Most of this increase, however, will be of benefit to the nation as a whole. Only a relatively small part will be available for an increase in farmers' incomes or for a reduction in the support costs for agriculture. The level of farmers' incomes will almost certainly lag behind the incomes of the community as a whole up to 1965. After 1965 there seems every chance that they will keep pace with the general rate of increase provided that a modest reduction in the number of farmers continues. But neither the total value of agricultural production nor the global farm incomes can be expected to rise as fast as the national income in the normal course of economic development. The purpose of these calculations relating to productivity and income is not really to make any deliberate forecasts of the level of incomes or the cost of price support; it is the forecasts of production and demand which concern us directly. But sufficient evidence has been given to show that the present system of support is feasible as a basis for prediction that it does not lead inevitably to an eclipse of farm incomes or an endless increase in the burden on the taxpayer. The forecasts themselves appear to be consistent with the main points of the White Paper on government policy of last December in that, as government support for agriculture may be expected to reduce, the farmer will gain some share of their increased productivity. Admittedly the progress in both directions will be slow. But if a substantially higher or lower rate of support for 1965 had been chosen no progress at all would be likely in one direction or the other.

Last December's White Paper may be considered as an interim statement of government policy until such time as the present support system is replaced by a system based on higher market prices in line with the agricultural policies of the Common Market. The forecasts made will be of very limited use if this were to happen; but they would certainly be more similar to the forecasts made under the assumption of high feed prices; with a rather higher production of sheep and grain and a lower production of eggs and pigmeat. The

forecasts have been presented with rather a large range of possibilities according to different assumptions. It seems only fair to come down decidedly in favour of one of these. But if we say that we expect that the lower estimate of feed prices will prevail and that the forecasts of price, quantity, incomes, etc., should lie within the boundaries given by the assumptions Aa, Ab, Ba and Bb this should be precise enough for most purposes. If more precision is required, the assumption (a) should be preferred to the assumption (b) in that a 1.3 per cent. rate of growth of general productivity appears to be very much more likely than a rate of growth of 2.0 per cent. on recent form. At present birth rates the higher population forecast of A is more probable than B and for 1965 at any rate the forecast Aa can be taken as the most probable choice. For 1975 a mean between Aa and Ba might be considered as the most likely forecast. Perhaps a more reasonable objection to the forecasts is that they give the impression of too much certainty. We have shown that we do not consider that different assumptions concerning general productivity and the population up to 1965 make very little substantial difference to the forecasts. But this does not reflect the full range of our uncertainty concerning the situation in 1965. There are many important factors like the weather for which we cannot be expected to make allowance. There are many important factors like the implications of the changing structure of distribution on demand which may well be of greater significance than the effects of different levels of real income for the demand for some of our farm products. In only one or two cases were we able to make some quantitative assessment of these factors, not because they were considered to be irrelevant, but simply because there was no clear indication of the size or even the direction of the effect of these imponderable factors on the demand for any commodity at the farm level. It may well be seen in retrospect that we considered some of the less important factors affecting farm prices.

The quality of farm produce offered can of course affect farm incomes and prices received as well as quantity. In Tables 45-48 this subject is largely ignored. There is of course evidence from budget data that an increase in the price paid for food at retail level is likely as incomes increase. This varies according to different commodities but a rise of 1 per cent. for each 10 per cent. rise in income is a reasonable average. If all of this increase could be taken back to the farm gate level this would mean a substantial rise in farm income of somewhere between £50 and £100 millions by 1975. But most of the increased price in fact is for services in the distribution process and we cannot possibly consider such a large increase in the value at the farm level. It also remains true that with or without an increased demand for quality the better apple is likely to sell for the higher price. By increasing the quality of production farmers can probably increase their average price. Even if the quality is achieved with loss of quantity produced there is probably a gain in income, and there will be a scarcer supply in quantity on the market and the general price level for all qualities will probably rise. The discussion concerning quality therefore falls into two parts - how much is demanded at the

farm level, and how much is supplied. This can be considered on a commodity by commodity basis.

For milk we expect no rise in the pool price due to quality improvements. There are unlikely to be sufficient incentives to raise the butterfat or solids net fat content of milk. Some increase in the keeping quality of milk can be expected which will provide some foundation for the campaign to increase liquid milk sales. But in spite of this we cannot expect much extra headway to be made in the face of lower real prices for some other foods. There is only slight evidence of demand for higher priced milk at consumer levels as incomes increase.

For eggs there is more evidence of demand for a higher priced egg (possibly a larger egg) at consumer level as incomes rise. There is, however, some difficulty in maintaining size and other qualities of eggs as a shift towards more intensive methods is made. It seems likely that such progress as is made in breeding for larger eggs, variation in the seasonal pattern of laying, speedier marketing, etc., will be only sufficient to offset these difficulties.

For meat there is fairly substantial evidence of a demand for quality as incomes rise. For all kinds of meat we can expect a rise of 1 per cent. in price per lb. for each 10 per cent. rise in real incomes from cross sectional analysis. It is far from clear, however, that any more than a small proportion of this demand for quality can be met. Much of it represents a demand for special joints, usually towards the rear end of the animals concerned, in preference to other joints which must in the nature of things be produced at the same time. In the case of pigmeat there is a fair chance that the inferior joints can be disposed of advantageously in an increased production of manufactured meat of a sufficient quality. Some of the increased demand for quality of meat will also be for younger or leaner animals. The improvement in quality of beef production from home-produced meat allowed for, owing to a decreased proportion of old cows, amounts to about 4 per cent. in average price at wholesale for 1965 and 1975. This appears more than sufficient to meet the normal increase in demand for quality from the consumer's angle for 1965 and adequate for 1975. The decreased proportion of fat ewes in the total for mutton and lamb by 1975 may be sufficient for an increase of 1 per cent. or so in the price of mutton at wholesale. The change in the proportion of old sows among the pigmeat cannot be considered important. It is doubtful whether any further improvements in quality are likely from the production side in the case of beef and mutton unless more economic pressure is applied to reduce the weights of livestock. The reasonable basis for sufficient pressure to reduce carcase weights from the consumer demand angle is not likely to be very great as only a fraction of the demand for quality will be a demand for lightweight cattle or smaller lambs. The price incentive is more likely to be applied as a deliberate measure by the government to reduce the quantity of meat produced in conditions of surplus and hence the burden of subsidy on fat cattle and sheep. The method would be of course to revise premiums on different grades without prejudice to the average

price. This seems possible in the light of the situation forecast for 1965, but whether it would do much to increase farmers' gross receipts from cattle and sheep is doubtful because of the reduction in quantity of meat produced. The possibility of an expansion of incomes from the production of higher quality pigmeat is also substantial from the production side. Progress in producing carcases with a better grading for pork and bacon will almost certainly occur - and has already taken place. But the demand for the cheaper fat pigs in excess of bacon weight has also been substantial, so that the demand for poorer quality pigs may increase with manufacturing demand. The other difficulty in anticipating an increase in quality is that a demand for quality at retail level may mean a demand for Danish rather than English bacon, merely diverting supplies of English pigs away from the market in which they might earn quality premiums. In the case of poultrymeat the average quality as expressed in terms of tenderness of meat is likely to increase; but expressed in terms of flavour some people would regard the increased proportion of broilers as a negative contribution to quality. Taking meat as a whole it does not seem that we can put the expected increase in quality at more than £5 millions in excess of the values already taken into account in Table 46, and an even lower figure seems appropriate for 1965. Although such a sum of money is not to be despised it is only about 1 per cent. of the value of meat production.

On the crops side no improvement in the quality of cereal crops can be expected from the viewpoint of the millers or the maltsters. The premiums to encourage this quality are not likely to be sufficient. In fact more interest in feeding barley may be developed. Improved facilities for storage on farms are unlikely to do more than counterbalance the harm done by the shift towards combine harvesters in the timing of supplies reaching the market. The room for increased quality is most marked in production of fruit and vegetables; on the demand side this is much greater for vegetables than for fruit. Each 10 per cent. rise in income is likely to be associated with a 2 per cent. rise in the value of each lb. of fresh vegetables consumed and with a 1 per cent. rise in the value of each lb. of fresh fruit. Most of the increase in price should be reflected in an increase in demand at the farm level as well as at retail. It represents either a demand for better varieties or a demand for an increased culling which will require an increased quantity. The demand for an increased quality of English tomato as real income rises is not supported by much evidence and can be ignored. The price is unlikely to rise above the levels suggested. The demand for higher quality potatoes will probably increase by about 1 per cent. with each 10 per cent. rise in incomes at retail level, although one source of demand for high quality - the chip trade - is more likely to decline. It will be difficult to translate this demand back to the farm level but we might put the extra value of production due to quality at anything up to £2 millions by 1975. This assumes that the market for early potatoes is not allowed to be taken entirely by imported supplies and a somewhat stricter definition of quality is applied by the Potato Marketing Board to the home crop. For fruit there is every indication that the dispositions of growers, measured by their

present allocation of new planting, are entirely sufficient to meet any projected increase in demand for quality. In fact they may well exceed it. A further £2 millions would seem a reasonable allowance. Our only fear is that we have exaggerated the likely quantity of production and hence (in the face of a fairly elastic demand) the value of home production of fruit. If the demand for other vegetables were entirely met by home supplies we would certainly expect an increase in the value of production due to quality at farm level. Probably an increase of £3 millions would not be unreasonable for 1975. There might be difficulty in achieving this increase in the face of competition for the salad and off season vegetables from abroad. Perhaps £2 millions might be more reasonable. In fact we would expect about £6 millions increase in value of production of fruit and vegetables by 1975 due to quality. Certainly we are more confident of this than of the £5 millions increase suggested as likely from meat.

The increase of £11 millions in farm incomes would not be insubstantial. This would apply to 1975 however rather than to 1965 when the farm income problem is more likely to be serious. Moreover we would logically have to offset this with improvements in the quality as well as the quantity of inputs supplied to agriculture by 1975. These improvements might take the form of an increased proportion of compound rather than straight fertilizers and, unless there is a radical change in attitude, an increase in the proportion of compounded feed. The quality of many miscellaneous items of cost omitted from Table 48, as well as the quantity of these items may be liable to rise; more use may be made of veterinary services and the cost and quality of these services may increase. It is doubtful also whether there will be any reduction in the cost and quality of marketing services associated with store livestock, seeds, machinery, etc. In fact one of the vital conditions associated with a decline in the farm labour force may be to avoid doing too much handling of fertilizers, feedingstuffs, dressing of seed, etc., on the farm. So on balance the consideration of quality may well add an extra £10 millions or more to the value of farm produce in 1975, but with an equal rise in the quality of inputs this does not seem in itself an adequate answer to the problem of farm incomes; although progress in quality of production will tend to be less self-defeating than progress in quantity. The present subsidy system does not always support the production of higher quality farm produce, and may well be amended to increase the protection of higher quality produce. But there is no very strong evidence that it ought to be amended very much in this direction, or that a more perfect reflection of consumers' preferences in the marketing system or the normal increased demand for quality ought to result in a drastic reduction in the production of lower grades of farm produce. There remains the possibility that quality and value of production will increase faster than suggested with or without the increase in demand for the higher grades of produce. But we think this unlikely and would rather ignore quality altogether, than rely on it as the major factor in obtaining an increased value of farm production or farm income.

The Expected Level and Cost of Imported Supplies of Food and some other Agricultural Products

We are now in a position to forecast the actual volume of imports that we can expect to receive in 1965 and 1975, after the adjustments due to price changes have worked themselves out. Tables 49A and B consider the imports in eight main groups, by volume and by current value at c.i.f.

(1) The first group includes the net imports of meat, cattle, fish and eggs. The volume index for this group is based on the groupings given in Table 50, together with an estimate of the value of net imports of cattle. Also a rather large addition (of the order of £10 million) has been made for improved quality of imports of fish (largely the results of abolition of restrictions on imports of salmon), and some other smaller additions to allow for a fall in the share of frozen beef in imported supplies, and a further rise in the share of lamb imports in the total supply of mutton and lamb.

The real cost of imports in this group carries the percentage changes in the internal price, which we found necessary to reconcile supply and demand, and also the extra cost of tariff concessions on bacon and fish granted to Denmark, and other members of E.F.T.A. The volume and the real cost of imports of the meat group can be expected to rise somewhat under all assumptions.

Under the leading assumption (high population, low income, low feed prices) which corresponds most closely to present trends, we expect a rise of 7 per cent. in volume by 1965, and 12 per cent. by 1975. But the real cost is only expected to rise by 2 per cent. in 1965, and 7 per cent. by 1975.

(2) Milk products cover net imports of butter, cheese and other milk products. But the structure for 1965 and 1975 is simplified by the assumption that the net imports of other milk products are zero in milk equivalent and value.

Under the leading assumption, a fall of 10 per cent. in volume and cost is forecast for 1965 and 1975. But the situation may well be altered radically in favour of imports if the proposed quota system for milk producers within the United Kingdom is adopted. A more detailed study of milk supplies is given in Table 51.

(3) Fruit includes net imports of canned, fresh and processed fruit of all sorts: except dried fruit. The structure of imported supplies is given by the breakdown, in Table 52. (The corresponding pattern for home supplies is given in Table 53).

The quality of imported fruit seems fairly well covered by the breakdown: the move towards increased processing of fruit does not

automatically tend to increase the value of fruit imports, since the price of fruit equivalent in the form of concentrated juices is low, while the price in the form of canned fruit is high. Home production of canned fruit will probably expand as fast as the imported supply. A token increase in value to allow for unspecified increases in quality of imports has been added to the volume and cost of imports. Under the leading assumption, we expect the volume of imports to rise by 19 per cent. in 1965 and 34 per cent. by 1975. The cost of imports is expected to rise rather less rapidly - 15 per cent. by 1965, and 29 per cent. by 1975. The forecasts are, however, rather sensitive to income assumptions.

(4) Vegetables cover net imports of dried pulses, tomatoes, canned and fresh vegetables. The imports of potatoes are considered gross; but the exports of surplus and seed potatoes are not expected to be substantially different in the future.

A more detailed breakdown of quantities of vegetables supplied, is provided in Table 54. Some allowances for quality have been made, including specific increases in value and cost for an increased proportion of new potatoes among imports of potatoes, and a decreased proportion of canned tomatoes in imported supplies of tomatoes.

Some small additions to the value of vegetable imports to correspond to general quality improvements have also been made. Under the leading assumption we expect an increase in volume and cost of imports of 8 per cent. in 1965 and about 12 per cent. in 1975.

(5) Imports of grain have been considered as gross imports. Exports of products from grain are of considerable importance, however, totalling £14 million of cereal products and £57 million of whisky. The price of these imports has been taken as a major assumption and under the leading assumption we expect a fall in price Volume of imports should increase by 7 per cent. by 1965, but fall by 9 per cent. by 1975. Cost of imports should fall by 10 per cent. in 1965 and 22 per cent. in 1975.

The breakdown of supplies of grain for various uses is given in Table 56. The prospects for imports of maize appear relatively good, but this depends on a reasonable reduction of imported supplies of barley, as home supply rises - there is no sign yet that this is going to happen.

The first five groups are those that we consider to be in more direct competition with United Kingdom agriculture, and for this reason we consider they deserve treating as a separate total. (Sugar might well be added, but as the acreage of sugar beet within the United Kingdom is more or less fixed, there is no real pressure of competition between home produced and imported sugar).

In spite of the increased productivity of United Kingdom agriculture, there still seems some room for increase in these imports above the 1958-9 level - probably at lower prices. But even under the high feed price assumption, much of the fall in volume of

grain imports would be compensated by a rise in imports of animal products.

(6) Sugar, beverages, tobacco, dried fruit, nuts and some miscellaneous items have been treated as a single group. A valuation of the cost of refined sugar consumption within the United Kingdom from imported supplies, was made instead of valuing net imports of sugar. The direct imports of raw sugar may well fall, as the processing of sugar for export falls.

Net imports of tobacco and tobacco manufacture are included in this group - again there will probably be some loss in the processing trade of tobacco for export.

Spirits were not considered within this group, because we wished to concentrate on imports rather than exports; but exports of whisky are, in fact, expected to increase substantially.

Net imports of tea, coffee, cocoa, butter are also included. Exports of coffee essences are not included in the definition of net imports of coffee, but are assumed to take a constant proportion of coffee imports. A small allowance for a deduction in the average quality of coffee imports has been made in the total. This is chiefly associated with a rise in supplies of robusta coffee (chiefly from Uganda) for manufacture as coffee extract. Dried fruit, nuts and some other miscellaneous items have been considered here. A structure of consumption of beverages, sugar and tobacco is given in Table 55.

The effect of changes in price within this group has been ignored in the preparation of the forecasts; but it seems more likely, in the context of declining prices for other foods, that prices will fall rather than rise. A fall in prices of coffee seems particularly likely.

In order to be consistent, we have fixed the volume and real cost of imports at a similar level. Both rise by 9 per cent. in 1965, and 18 per cent in 1975 under the leading assumption.

(7) Net imports of oils, fats, oilseed, cake and other high protein feeds have been considered as a single group. This represents a deviation from the treatment in the Trade Statistics, which consider lard and oilcake under food and animal feedstuffs, whereas other fats and oilseed came under raw materials.

The valuation of imports within this group proved rather difficult, since the structure of imports of oilseed and vegetable oils is expected to change to meet new circumstances. First, lard and technical tallow have been replacing vegetable oils in the manufacture of margarine, lard compound and soap. Second, the processing of imported oilseeds from West Africa within the United Kingdom, is likely to be transferred to West Africa. Third, in order to maintain crushing capacity, the imports of oilseed of low oil content

is likely to rise - in particular linseed and soya beans. Also the rising cost of lauric acid oils relative to others, seems likely to cause some shifts in the pattern of consumption.

The implications of the changes for the volume and cost of imports of oilseed, fats, oils etc., is considered in Table 57. The forecasts allow for the effect of price changes of a detailed list of oils and oilseeds and corresponding changes in utilisation, but it is not possible to present all the details here. Imports of oilcake, fishmeal and lard seem likely to rise in volume, while imports of other items in the group seem more likely to fall. The rise in the volume of imports for the group as a whole is due to the increased requirements for high protein feed; the demand for consumption of fats and oils is not likely to rise, and the demand for soap manufacture will fall. The real cost of the imports within this group seems more likely to fall than to rise.

The total of the first seven groups corresponds roughly to the imports of food, beverages and tobacco for consumption within the United Kingdom, plus some additional usage in industry and manufacture of food items for export - notably whisky. It deviates from the definition of the volume of gross imports of food, drink and tobacco given in the trade statistics in many senses. On the whole we expect the volume of imports in the trade statistics to rise a little faster than our total, owing to the different treatment of oilseed, oils, and fats.

Forecasts of the volume and cost of imports in the official data, which we consider consistent with our forecasts, have been made in Table 49. We must consider the forecasts for 1965 and 1975 modest, if set against the background of 1955-9. But as against the observed volume of imports for 1960 of 121, we can see no room at all for further expansion up to 1965. The very rapid rise in the volume of imports of food from 100 in 1954, to 121 in 1960 must be considered as abnormal and due to two factors: the abolition of some import restrictions and the very sharp fall in the real price of imports. The real cost of imports of food over the same period did not rise at all - that is to say, the cost of food imports (whether measured net or gross) rose at just the same rate as the retail price index.

It seems probable that the real cost of imports will rise by one or two per cent. up to 1965, while the volume remains steady. Even looking ahead to 1975, there is no obvious reason why the cost of food imports should, of itself, cause alarm over the balance of payments provided there is no sharp recovery of grain prices.

If the volume of imports of food should continue to rise over the next three or four years at the same rate, then these forecasts must be substantially incorrect.

Our own view would be that the rate of growth of imports at present is too sharp to be carried by the growth of productivity and cannot last.

(8) The net imports of hides and fibres were considered as a further group, which was more isolated on the demand side from the other groups. The items considered in the forecasts of imports are listed in Table 58.

The coverage of imports is not complete and only covers the major items: hides, sheepskin, raw wool, cotton, flax, jute, hard hemp and sisal. Many minor waste products are omitted. Generally the pattern of demand within this group suggested a fairly strong income effect offset by a negative trend, due to replacement of natural products by synthetic fibres, plastic etc. We assumed this negative trend was independent of the general rate of technical progress in the United Kingdom: hence the higher productivity assumptions correspond to higher consumption levels. Moreover, industrial uses of raw materials were considered to be linked to the index of industrial production, which would probably increase faster than the overall domestic product.

Exports of raw wool from the United Kingdom were expected to increase; exports of woollen goods were also expected to increase up to 1965, but are not included in the definition of net imports. Cotton consumption is considered as adequate to cover United Kingdom requirements for home consumption, imports and exports of cotton goods balancing.

We think that the volume of imports of wools and fibres will probably fall, but might rise in the event of a spurt in industrial production. We expect the price of cotton to fall, but are uncertain of the direction of other price changes.

The Use of Agricultural Products in Industry

The total of agricultural products given in Table 49 is not complete; excluding rubber, wood pulp, timber and some other items. These were not considered at all in our forecasts. The total volume seemed likely to rise a little less than the volume for the groups that were mostly for food. Materials and industries we did consider are listed briefly with some comments:

Soap - for which we expected production to decline substantially by the same amount under all assumptions; starch of which the production will probably decline - but it is difficult to separate from the production of glucose from maize which is increasing; technical oils in industry which seemed like many other agricultural products in industry, to increase with the index of industrial production, and to fall with trend; leather for shoes and for other goods, again subject to a strong income elasticity of at least one, according to cross sectional analysis, but subject to a strong negative trend owing to substitution of synthetic products for sole leather and to a lesser extent for other kinds of leather. Demand for jute, hemp, sisal etc.,

would all naturally rise with industrial and agricultural production - and there is evidence that they in fact do so - but again the increase tends to be offset by substitution with plastics, paper etc.

The demand for total weight apparel fibres also seemed subject to an income effect, which was about .7, but subject to a negative trend by weight on account of the lighter nature of synthetic fibres. The proportion of cotton in consumption of apparel fibres is also expected to fall from about 50 per cent. in 1967, to just over 41 per cent. in 1975. The proportion of wool is also expected to fall a little too.

The uses of molasses in the manufacture of industrial alcohol has been almost displaced by the use of mineral oil.

In fact, although there are many examples of agricultural products replacing other agricultural products in industry, there are remarkably few examples of technical development providing new uses for agricultural products as raw materials. Some milk products and other agricultural products must be used in the manufacture of plastics, but this does not seem to amount to anything very important yet. We felt less certain about the future of these industrial outlets for agricultural products, than concerning the future consumption of foodstuffs which could be traced back more easily to definite quanitities consumed in budget data.

Perhaps even more difficult to assess was the consumption of grains for malting and distilling. It was fairly reasonable to relate the consumption of beer, directly to the use of malt and hops - although even this approach may seem a little naive. The future consumption of grain in distilling in 1965 and 1975, is, however, related not so much to the consumption of spirits at that time, as the distillers assessment of the future demand three to seven years later on. This puts the forecaster in the invidious position of trying to know better than experts, with the disadvantage of an extra lag between demand and supply.

The present position appears to be that the export demand for Scotch whisky is strong, and stocks to meet the demand not too high. The manufacturers blend two types of whisky: one made from malt and the other from malt and grain - the grain used being predominantly maize. The former type takes three years to mature, and the latter seven years or more. The proportion of malt whisky used to be higher than it is at present. Some of this reduction may be due to a genuine change of taste on the part of the consumers, some to a natural desire on the part of manufacturers to increase supplies as rapidly as possible while demand is strong. We think that in the long run, when the supply position eases, the proportion of malt whisky will tend to rise and the use of barley rather than maize, increase; but the long run may take several years, since the demand for both export and home demand seems likely to increase. At present the demand for maize for distilling and industrial uses is running at a rather high level, but we do not think it can increase very much beyond the present level.

Most of the industrial outlets for cereals appear, however, to come back to consumption of food or drink in the end, and could really be regarded as food processing industries.

Total Supply of Food, Drink and Tobacco

The value of commercial supplies of home produced food net of imported feed and cattle is given in Table 49 as an index based on 1955-9. The expected increase is somewhat less than the corresponding increase for U.K. agriculture because the fishing industry is not expected to expand. Taken in conjunction with the supplies of imports of food, drink and tobacco this gives an indication of the future demand for food at an early wholesale level - c.i.f. for imports, at farm gate for home produce and at landed value for British landings of fish. The total includes some industrial outlets other than for food, drink and tobacco, but these are not expected to affect the general direction of consumption by much. In Table 49 a weighted average of home and foreign supplies shows an increase of between 10 and 12 per cent. in the volume of consumption at the farm-import level for 1965; the increases for 1975 range from 16 to 24 per cent. These increases are substantially higher than the provisional forecasts for the value of food consumption at constant prices given in Table 5: partly because they include some quality improvements not considered in Table 5; partly because they include the upward adjustment of demand to supply at lower prices; partly because they include the more income elastic consumption of wines, beer and tobacco omitted from the total in Table 5; partly on account of the inclusion of distilling of grain for export.

Until 1965 we expect the volume of consumption of food at retail level to rise at about the same rate as the volume of supplies for food, drink and tobacco at farm-import level. Normally we would expect consumption of food at the retail level to rise somewhat faster than at wholesale level, but the totals are not quite comparable. Without the contribution from tobacco and material for alcohol the supply of food at farm-import level would be 1 per cent. lower in 1965 and 2 per cent. lower by 1975 under the leading assumptions; making an increase of 10 per cent. for 1965 and 16 per cent. in 1975. We would expect the food consumption at retail level to be up 11 per cent. by 1965 and up by 22 per cent. by 1975. These forecasts leave substantial room for an increase in the volume of marketing services between 1965 and 1975. These calculations have been made from the demand angle - that is to say, we have tried to make a reasonable estimate of the extra volume of marketing services consumers would require as incomes rise. It is possible that they will be provided with more marketing services than this by the food packaging and processing industries; probably with an increase in the cost of food. If this were carried too far it might actually reduce the consumption of food on the farm-import level. The real cost of food supplies

at the retail level ought to rise slower than the volume of food consumption at retail. In fact, if present trends continue they will be at about the same level. Estimates of the real cost of food at retail which would be consistent with our methods of forecasting would give an increase of 7 per cent. by 1965 and 15 per cent. by 1975.

Tables 50-56 give quantitative estimates for supplies of most kinds of foods and some breakdown between home and imported produce. Some brief comments on these tables will be made. Throughout the tables A denotes high population, B low population, (a), (b) and (c) increasing rates of productivity 1.3 per cent., 2.0 per cent., 2.8 per cent. In some tables the figure 1 denotes low feed prices, figure 2 high feed prices.

Meat (Table 50)

Consumption will probably increase by 10 per cent. per caput by 1965 and 13 per cent. by 1975. The total consumption should rise by 14 per cent. in 1965 and 22 per cent. in 1975. Under the most favourable assumptions consumption for 1975 might increase by 29 per cent.; under the least favourable by 20 per cent. The increased supply of poultrymeat will provide a very important part of the increase and will probably rise by 141 per cent. by 1975. Home killed beef is expected to provide 71 per cent. of supplies in 1965 and 1975 compared with 66 per cent. in the base period; home killed mutton 39 per cent. in 1965 and 1975, compared with 37 per cent. in the base period; home produced bacon will continue to provide about 40 per cent. of supplies up to 1965 and will increase its share a little after 1965.

Fish

The failure of British landings of fish to keep up with demand will only be made good in part by increased supplies of imported fish. But the low level of supplies of fish are to a certain extent caused by the expansion of supplies of poultry.

Eggs

Imported supplies of eggs are expected to fall to even less significant levels. Total consumption will probably increase by 13 per cent. in 1965 and by 24 per cent. in 1975. Prices are expected to be 10 per cent. lower in 1965 and 14 per cent. in 1975 at retail and wholesale levels.

Milk and Milk Products and Fats (Table 51)

Sales of liquid milk are expected to increase by 7 per cent. by 1965 and by 13 per cent. by 1975. Supplies of milk in all

milk products at U.K. conversion rates will increase by about the same amount. The proportion of liquid milk in sales through the Milk Marketing Board will fall from 72 per cent. in the base period to 64 per cent. in 1965 and 61 per cent. in 1975. Home produced cheese will account for 54 per cent. of supplies in 1965 and 61 per cent. of supplies in 1975 compared with 43 per cent. in the base period. Home produced butter (excluding farmhouse butter) will provide 14 per cent. of supplies in 1965 and 18 per cent. in 1975 compared with only 6 per cent. in the base period. In the event of the quota system for U.K. producers being adopted, this pattern of supplies would be considerably altered. We have no definite figures to offer in the absence of detail concerning the terms of the quota restrictions but would think that the share of home supplies in consumption of milk products would probably remain at about 20 per cent.; leaving some room for increase in imported supplies. But the production of farmhouse butter might well rise to 20-25 thousand tons in place of the present small production of 9 thousand tons.

Butter consumption as a whole will probably rise by 7 per cent. in 1965 and 13 per cent. in 1975; margarine consumption remaining practically steady. Cheese consumption will rise by 7 per cent. in 1965 and 15 per cent. in 1975. Consumption of lard and lard compound will probably remain steady; but more lard is expected to be included in the manufacture of lard compound and margarine. Consumption of other fats will rise by 6 per cent. in 1965 and by 13 per cent. in 1975. In all the consumption of fats will rise at the same rate as the population.

Cereals (Table 56)

The overall consumption of cereals as flour equivalent for food is expected to fall 2 per cent. by 1965 and 6 per cent. by 1975. The supply of grain for food, drink and industry is however expected to rise by 2 per cent. by 1965 and remain at the same level as in 1955-9 in 1975. The importance of breakfast cereals will probably continue to rise chiefly at the expense of oatmeal. But the use of maize in breakfast cereals is not expected to increase much. The proportion of home wheat milled has been taken as fixed at 22 per cent. and the extraction rate at 72 per cent. Most of the increased supplies of grain will be taken up in animal feeding-stuffs; requirements of grain and offals for animal feed will rise by 15 per cent. in 1965 and by 17 per cent. in 1975. The supplies of home grown cereals will increase by 11 per cent. in 1965 and by 31 per cent. in 1975. The share of home produced supplies in the total supply of whole grain will rise from 51 per cent. in the base period to 52 per cent. in 1965 and 60 per cent. in 1975. The proportion of low protein animal feeds provided by U.K. agriculture will remain at 55 per cent up to 1965 and then increase to 65 per cent. by 1975.

Sugar (Table 55)

Consumption of sugar in all forms will rise in line with population increases - by 4 per cent. in 1965 and 8 per cent. in 1975. The requirements of sugar out of imported supplies will probably not increase quite as fast as this; partly because of increased yields of home grown sugar beet and partly because of increased production of sugar (in glucose) from maize. These requirements will rise by 3 per cent. in 1965 and by 6 per cent. in 1975.

Beverages

Tea, coffee, cocoa. Consumption of tea is expected to rise in line with population - 4 per cent. by 1965 and 8 per cent. by 1975. Coffee consumption may rise by 22 per cent. in 1965 and 44 per cent. in 1975, due largely to increases in sales of coffee extracts based on pure coffee. The requirements of cocoa butter are expected to rise faster than those for cocoa powder. Imports of cocoa butter will rise by 23 per cent. in 1965 and 47 per cent. in 1975; imports of cocoa beans should rise by 10 per cent. in 1965 and by 15 per cent. in 1975. These projections were made at constant prices. In the event of lower prices it seems likely that requirements of coffee for manufacture of essences and requirements of cocoa butter might rise still further. It seems unlikely that requirements of tea or raw cocoa would be affected greatly.

Alcoholic drinks

Consumption of beer is likely to rise by 9 per cent. in 1965 and by 19 per cent. in 1975. Although these forecasts are given in bulk barrels, it might be safer to interpret them as measuring the value of the beer consumed at constant prices. In any case we expect requirements of hops and malt for beer to move in line with these forecasts. Consumption of spirits are expected to rise by 20 per cent. in 1965 and by 39 per cent. in 1975; consumption of imported wines by 27 per cent. in 1965 and 52 per cent. in 1975. These projections were made at constant prices. Recently consumption has risen rather faster than we expected and the chief reason seems to be a fall in the real price of alcoholic drink due to inflation; the real value of specific duties being reduced. Also a reduction in the duty on beer was made two years ago. As a result the consumption appears now to be almost at its 1965 level. But the government has recently shown renewed interest in using the duties on alcohol as a means of reducing consumers' demand generally. Increased charges have also recently been announced by breweries to cover rising costs of services. For these reasons the forecast of constant prices may still be met; and we do not wish to change the estimates for 1965.

Tobacco

Consumption of tobacco is expected to rise by 13 per cent. in 1965 and by 24 per cent. in 1975; in spite of a small negative adjustment for the scare over lung cancer. Like alcohol, tobacco has reduced in real price over the last few years owing to inflation. But taxes have recently been raised. The forecasts assume constant prices.

Fruit (Tables 52 and 53)

The total output of fruit in the U.K. will probably rise by 9 per cent. in 1965 and by 22 per cent. in 1975. The commercial output is expected to rise faster than this; the free supplies are likely to fall. We cannot say that we make these projections with any great confidence; we may well have over-estimated the increase. In this case our forecasts for the increased imports of fruit of 17 per cent. in 1965 and 31 per cent. in 1975 should be regarded as minimum increases. Imports of dried fruit and nuts should also rise. The consumption of citrus fruit in all forms should rise by 23 per cent. in 1965 and by 41 per cent. in 1975. Consumption of all fruit (except dried fruit) by 14 per cent. in 1965 and 28 per cent. in 1975.

Vegetables (Table 54)

The total consumption of vegetables will probably fall a little owing to reduction of free supplies. The supplies can be divided into four main groups: potatoes, dried pulses, tomatoes, other vegetables. Commercial supplies of potatoes will probably fall by 2½ per cent. in 1965 and by 8 per cent. in 1975; dried pulses by 17 per cent. in 1965 and by 43 per cent. in 1975. The consumption of tomatoes, including an equivalent weight for canned tomatoes, is expected to rise by 10 per cent. in 1965 and by 22 per cent. in 1975. Home grown tomatoes are expected to be relatively scarce, imported tomatoes especially from the Channel Islands will probably make up the gap. The premium on home grown tomatoes will probably rise. Supplies of other vegetables are expected to increase by 8 per cent. in 1965 and by 17 per cent. in 1975. But this last group is so diverse that further detail seems essential. Four more sub-groups (root vegetables, fresh green vegetables, legumes, salad and other vegetables) are given for home supplies. All are expected to increase, root vegetables by less than other groups. There is further breakdown of the legume group because the total output by weight can be misleading. The sections which are increasing - namely the peas for quick freezing and canning - measure their output by vined weight, whereas other legumes are measured in pod. The peas for quick freezing are expected to rise by 64 per cent. in 1965 and by 90 per cent. in 1975.

These comments on food supplies have been made in the context of high population, low productivity and low feed prices. Clearly a different set of figures would follow from other assumptions. But the tables give some reasonable idea of the range of possibilities. The food supplies shown are not intended to represent the supplies actually reaching the consumer. Still less are they intended to measure what is actually eaten. On the whole they seem to indicate no great increase in calorie supply per head; increases from meat, milk products and fruit being balanced by reductions in cereals and within the vegetable group. We should be rather surprised if the actual consumption of calories were to rise. Extra wastage - especially in the form of trimming of fat from meat - will probably occur (especially under high productivity and low feed price assumptions). What we have concentrated on is the meaning of the extra demand for food in demand for produce at the farm or at the port; much less on the form in which the food is eaten or the method of presentation.

IV

The Implications of the Forecasts and their Historical Context

What we have tried to provide in this report is a set of forecasts that are consistent among themselves and with the major assumptions concerning population, economic growth and international grain prices which govern them. But all the forecasts are governed by a static outlook; assuming that policies which have been followed over the last few years with respect to agriculture and imports of agricultural products are essentially unaltered. Changes assumed are changes of degree, not changes in kind. The forecasts are static in another sense in that they correspond to a static economic analysis. We have tried to assess shifts in supply and demand over a wide range of interrelated products and to reconcile these shifts by rather simple modifications of government policy operating mainly in conjunction with a free market price system.

Negotiations concerning the entry of Britain into the Common Market have now reached a more definite stage. Should they be successful many of the assumptions on which we have based our forecasts will immediately disappear. Even apart from the question of the Common Market there have been signs that the government is moving a little away from the policy of cheap food and deficiency payments. The suggestion of a quota system for milk producers may be a first step in this direction. So in many ways our forecasts concerning the future may already be regarded as history.

But we can make a few categorical statements about the effect that the entry of the U.K. into the Common Market would have on our forecasts. First it will not increase the consumption of food within the U.K. Whatever the advantages of joining the Common Market consist of they are unlikely in themselves to be sufficient to raise general productivity trends as much as from assumption (a) of 1.3 per cent. per annum to assumption (b) of 2.0 per cent. per annum. Such an increase in productivity would be hardly sufficient to offset the fall in consumption of food that would occur if a cheap food policy gave place to a dear food policy. Second, the distribution of imports and home supplies will become closer to the forecasts under high feed prices than to those under low feed prices. Probably the assumption of high population, high feed prices and low productivity would give the quantities of food consumed that would fit most closely to conditions with the U.K. inside the Common Market. But there is no real substitute for revising the estimates completely when the results of the negotiations are known.

Perhaps the best use that could be made of the forecasts themselves is as a yardstick against which to set departures in policy. The advantages of any new arrangements for agriculture from the point of view of consumers, producers or importing countries must be set against what might have been gained or lost by leaving the present system intact.

The forecasts themselves are presented as definite figures; these follow more or less mechanically once the details of the original framework have been settled. Although the methods of forecasting are essentially simple, the difficulties in operation are considerable; retrospective adjustments are difficult to make since they often involve numerous adjustments to other groups. But there is some freedom of action in that sub-totals of groups like fresh vegetables, imported grain, etc., can be re-set even after the final total has been calculated. The details of the original framework are however a matter of great uncertainty: a great deal of it is speculative. The subsequent mathematical calculations do not alter the fact that the forecasts themselves are an opinion concerning the future.

That is an opinion about the way in which everyone who is concerned with the supply and demand of agricultural produce (in short, everybody) will behave under certain specified conditions. It does not represent advice on how they ought to behave; although the use of the methods of economics in forecasting assumes some degree of rational response to economic incentive. If people behave differently over the next few years it will be our mistake - not theirs.

The conclusions that we have reached are fairly complimentary to the agricultural industry within the U.K. in that a continued increase in productivity is assumed which is ahead of that in the rest of the country. It is unfortunate that we cannot predict a commensurate reward. Some improvement in farm incomes should

however be possible even in conjunction with a reduction in support costs. The outlook for farm incomes is likely to be a little brighter after 1965.

The methods by which prices are negotiated between farmers and the government are of course fundamentally different from the way in which our forecasts of price have been prepared. We have assumed on the part of the government a reasonable desire to reduce support costs, to distribute them fairly evenly among the main agricultural groups and maintain faithfully the provisions of the 1957 Agriculture Act and the policies outlined in the White Paper of last December. The following up of these objectives might well by a process of trial and error end up with guaranteed prices somewhere near their projected levels. But again we do not wish to say that the rate of fall in farm prices which we have suggested is the correct rate. It appears likely that very little progress will be made up to 1965 in reducing the real cost of supports to agriculture or in increasing real farm incomes; considerable progress will be made in the goal of achieving an efficient agriculture. After 1965 progress in all three directions would appear to be feasible.

The imports of food, beverages and tobacco into the U.K. since 1954 has increased by over 3 per cent. per annum in volume. It is impossible to see how such a rate of expansion can continue. There only appears to be modest room for further expansion. This conclusion must be substantially unchanged if the U.K. were to enter the Common Market. Any increase in imports from Europe must be balanced by a decrease of imports from somewhere else - up to 1965.

In making our forecasts we have tried to assess the effect of some important factors to which we could assign a definite quantitative value; we may also have wasted time considering the effect of other factors which turned out to be trivial. But there are many more of both sorts that we must have ignored completely. There are also many new important developments which we had to ignore because we could not tell what kind of effect they were going to have at all. We have throughout maintained a naive attitude towards the problems associated with predicting the future, always accepting a simple explanation of events rather than a more complicated one whenever there was any choice in the matter. Wise men who are capable of weighing all the imponderable factors involved would certainly refuse to make predictions at all. It is perhaps no coincidence that a seer is usually blind.

Table 1. Forecast of Population and Consumption Units, and estimatee of total expenditure per unit

Population

	1957	1965 A	1965 B	1975 A	1975 B
			thousands		
Total population	51,456	53,283	52,625	55,416	53,645
0-4 years	3,907	4,205	3,846	4,315	3,931
5-9 yeare	4,032	4,057	4,123	4,242	3,783
Males 10-14 years	2,057	1,975	1,948	2,140	1,937
15-19	1,630	2,094	2,166	2,049	2,087
20-64	14,696	14,957	14,806	15,281	15,025
over 65	2,345	2,510	2,638	3,127	3,399
Femalee 10-14 years	1,966	1,884	1,854	2,028	1,846
15-19	1,628	2,017	2,072	1,962	1,988
20-64	15,603	15,553	15,306	15,582	15,208
over 65	3,591	4,030	3,866	4,690	4,441

Scale of coneumer units per person

Population	Milk	Meat	Fats	Cheese and Eggs	Cereal and Potatoes	Fruit	Vegetablee	Sugar	Beer	Wine	Spirits	All Coneumption
0-4 years	1.25	.20	.40	.50	.50	.30	.35	.55	0	0	0	.70
5-9 years	1.05	.35	.75	.80	.90	.50	.60	.70	0	0	0	.70
Males 10-14 years	1.05	.70	1.05	.90	1.20	.70	.80	.90	0	0	0	.70
15-19	1.05	1.00	1.10	1.00	1.20	.90	1.00	.90	1.00	1.00	1.00	.80
20-64	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
over 65	1.10	.70	.85	.95	.85	.90	1.00	1.00	1.00	1.00	1.00	.80
Femalee 10-14 yeare	.90	.60	.80	.80	.80	.70	.80	.90	0	0	0	.70
15-19	.90	.70	.80	.80	.80	1.10	1.00	.90	0	.70	.50	.80
20-64	1.00	.70	.80	.80	.80	1.10	1.00	.90	0	.70	.50	1.00
over 65	1.10	.60	.70	.75	.70	.90	1.00	.90	0	.70	.50	.80

Expreseed as percentage of value in 1957

	1957	1965 A	1965 B	1975 A	1975 B
Population	100	103.6	102.3	107.7	104.3
General consumption units	100	103.2	102.0	107.0	103.9
Milk unite	100	103.7	102.3	108.0	104.5
Meat	100	103.5	102.7	107.2	104.8
Fats	100	103.4	102.5	107.4	104.4
Cheese and eggs	100	103.5	102.5	107.6	104.6
Cereal and potatoes	100	103.5	102.6	107.4	104.2
Fruit	100	103.4	102.4	107.2	104.6
Vegetables	100	103.6	102.6	107.7	105.0
Sugar	100	103.4	102.4	107.7	104.7
Beer	100	104.8	105.0	109.6	109.9
Wine	100	104.3	103.7	108.3	107.3
Spirite	100	104.4	104.0	108.6	107.7
Cocoa			- ae for sugar -		
Coffee and tea			- as for vegetables -		

Estimated total expenditure per unit based on 1957

	1957	1965 A	1965 B	1975 A	1975 B
(a)	100	115.41	116.57	131.03	133.78
(b)	100	118.22	119.31	143.64	146.58
(c)	100	120.83	122.06	159.07	162.37

Estimated compound rate of growth of consumers' expenditure per coneumer unit, % per annum

	1957-1965		1965-1975	
	A	B	A	B
(a)	1.81	1.93	1.28	1.39
(b)	2.11	2.23	1.98	2.07
(c)	2.40	2.52	2.78	2.90

A refers to population forecaste by the Regietrar General and the Government Actuary.

B refere to population forecaste by Colin Clark.

(a) Productivity increase of 1.3 per cent. per annum.
(b) do. do. 2.0 do.
(c) do. do. 2.8 do.

Table 2. Forecast of Labour Force, in thousands

	Structure of Total Population of Working Age										% of population employable at present rates	
	1957		1965 A		1965 B		1975 A		1975 B			
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
15-19 years	1,675	1,628	2,109	2,017	2,181	2,072	2,064	1,962	2,102	1,988	89	90
20-24	1,665	1,616	1,819	1,760	1,887	1,717	1,950	1,864	2,012	1,819	97	70
25-29	1,710	1,693	1,693	1,649	1,591	1,597	2,069	1,989	2,136	2,015	99	40
30-34	1,791	1,800	1,653	1,631	1,535	1,587	1,778	1,728	1,742	1,656	99	40
35-39	1,792	1,838	1.697	1,699	1,660	1,676	1,656	1,619	1,517	1,543	98	40
40-44	1,767	1,835	1,870	1,913	1,817	1,858	1,617	1,601	1,468	1,538	98	40
45-49	1,844	1,895	1,614	1,682	1,583	1,651	1,646	1,661	1,581	1,620	97	38
50-54	1,722	1,821	1,714	1,797	1,742	1,832	1,778	1,853	1,715	1,781	96	36
55-59	1,441	1,656	1,651	1,788	1,683	1,771	1,474	1,602	1,461	1,557	94	34
60-64	1,119	1,454	1,400	1,634	1,463	1,618	1,468	1,666	1,548	1,680	88	30
65-69	899	1,248	1,018	1,392	1,071	1,369	1,284	1,576	1,380	1,541	65	20
70-74	678	1,014	710	1,112	723	1,078	939	1,311	1,009	1,271	45	10
Total 15-74 years	18,103	19,498	18,948	20,072	18,936	19,826	19,723	20,432	19,671	20,009		
Potential labour force at above rates	16,730	8,189	17,426	8,578	17,372	8,510	17,983	8,634	17,773	8,489		
Observed labour force	16,613	8,148	17,304	8,535	17,250	8,467	17,857	8,591	17,649	8,447		
Armed forces	708		400		400		250		250			
Increased education	0		150		150		620		620			
Civilian employees	24,053		25,289		25,167		25,578		25,226			
Based on 1957	100		105.1		104.6		106.3		104.9			
Ratio of earners to consumer units	100		101.9		102.6		99.3		101.0			

Table 3. Assumptions Concerning Productivity, Gross Domestic Product and Investment

Productivity of Labour Force = Gross Domestic Product ÷ Civilian Labour Force
Gross Domestic Product 1955-9 = 100
Civilian Labour Force 1957 = 100
Productivity per Head 1955-9 = 100

			1957	1965	1975
Assumed rate of growth of productivity per head:	(a) 1.3 per cent. per annum	Productivity	(a) 100	110.8	126.1
	(b) 2.0		(b) 100	117.2	142.8
	(c) 2.8		(c) 100	124.7	164.4

Civilian Labour Force 1957 A 100 B 100 1965 A 105.1 B 104.6 1975 A 106.3 B 104.9

Gross Domestic Product based on 1957

	1965 A	1965 B	1975 A	1975 B
(a)	116.4	115.9	134.0	132.3
(b)	123.2	122.6	151.8	149.8
(c)	131.1	130.4	174.8	172.5

Capital Consumption as % of 1957 Gross Domestic Product

	1957	1965 A	1965 B	1975 A	1975 B
(a)	10	11.6	11.6	13.4	13.2
(b)	10	12.3	12.3	15.2	15.0
(c)	10	13.1	13.0	17.5	17.3

	Net Investment 1957-65 p.a. as % of Gross Domestic Product 1957		Net Investment 1965-75 p.a. as % of Gross Domestic Product 1957		Net Investment as % of Gross Domestic Product 1957			
					1965		1975	
	A	B	A	B	A	B	A	B
(a)	8.2	8.0	7.0	6.6	7.7	7.4	6.3	5.8
(b)	11.6	11.3	11.4	10.9	11.5	11.1	11.3	10.7
(c)	15.6	15.2	17.5	16.8	16.4	15.9	18.6	17.7

Gross Domestic Product - Gross Investment

	1957	1965 A	1965 B	1975 A	1975 B
(a)	81.5	97.1	96.9	114.3	113.3
(b)	81.5	99.4	99.2	125.3	124.1
(c)	81.5	101.6	101.5	138.7	137.5

Estimated Consumers' Expenditure based on 1957

	1957	1965 A	1965 B	1975 A	1975 B
(a)	100	119.1	118.9	140.2	139.0
(b)	100	122.0	121.7	153.7	152.3
(c)	100	124.7	124.5	170.2	168.7

Table 4. Simple percentage rates of growth of consumption corresponding to compound rates of growth of total expenditure

	For 1957-65	Minimum for 1965-75	Maximum for 1965-75	Trend in %p.a. per consumer unit
Liquid milk	.20	.169	.182	-
Butter	.40	.339	.364	- .25
Cheese	.28	.237	.255	-
Other milk products	.52	.440	.473	-
Eggs	.45	.381	.409	-
Margarine and Butter	.00	- .05	- .05	-
Lard and compound fat	- .20	- .25	- .25	-
Other fats	.20	.15	.15	-
Cocoa butter	.70	.70	.70	-
Beef and Veal	.25	.212	.227	- .25
Mutton and Lamb	.45	.381	.409	-
Pork	.50	.424	.455	- .50
Bacon and Ham	.40	.339	.364	- .50
Canned meat (imported)	.20	.169	.182	-
Poultrymeat	2.00	1.820	1.690	-
Fish	.30	.254	.273	-
Canned fish (imported)	.60	.508	.545	-
All cereal products	- .10	- .15	- .15	- .50
Sugar	.03	- .03	- .03	-
Dried pulses	- .30	- .50	- .50	-2.00
Nuts	.50	.50	.50	-
Dried fruit	.25	.25	.25	-
Fresh, canned and processed fruit	.80	.80	.80	-
Potatoes	.03	- .03	- .03	-1.00
Tomatoes (fresh)	.65	.65	.65	-
Tomatoes (canned)	.30	.30	.30	-
Vegetables (except potatoes)	.25	.25	.25	-
Beer	.30	.30	.30	-
Wine	1.50	1.50	1.50	-
Spirits	1.00	1.00	1.00	-
Tobacco	.67	.67	.67	- .25
Tea	.00	.00	.00	-
Cocoa powder (in all forms)	.30	.30	.30	-
Coffee beans (in all forms)	.61	.61	.61	+1.00

Table 5. Forecasts of Demand at Constant Prices

	Consumption 1955-9	Forecasts for 1965						Forecasts for 1975					
			A			B			A			B	
		(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
Liquid milk[a]	1519	1621	1628	1636	1602	1609	1617	1721	1749	1776	1673	1698	1726
Milk as butter[b]	2151	2308	2333	2351	2297	2318	2338	2448	2524	2604	2396	2467	2546
Milk as cheese[b]	498	536	540	543	533	536	539	575	587	600	562	573	586
Milk in other products[b]	263	293	297	300	291	294	297	323	335	348	315	326	339
All milk	4431	4758	4798	4830	4723	4757	4791	5067	5195	5328	4946	5064	5197
Eggs[c]	1012	1116	1127	1138	1109	1120	1131	1218	1257	1300	1192	1230	1271
Beef and Veal[d]	1162	1222	1229	1236	1216	1223	1230	1271	1297	1324	1248	1272	1299
Mutton and Lamb[d]	544	600	606	612	598	604	609	652	673	696	642	662	685
Pork[d]	414	442	448	452	441	446	451	462	480	499	455	473	492
Bacon and ham[d]	549	578	584	589	576	582	587	597	616	637	588	606	627
Imported canned meat[d]	192	204	205	206	203	204	205	217	220	224	212	216	219
Poultrymeat[d]	194	259	269	278	261	270	280	317	351	387	317	350	385
Offal[d]	200	215	217	219	214	216	219	228	235	245	225	233	241
All meat[d]	3251	3520	3558	3592	3509	3545	3581	3744	3872	4011	3687	3812	3948
Fish[e]	454	490	494	497	488	491	494	525	537	549	516	527	540
Imported canned fish[e]	53	60	60	61	59	60	61	66	69	71	65	68	70
Butter[d]	391	420	424	427	418	421	425	445	459	473	436	449	463
Margarine[d]	367	364	360	357	359	356	352	364	347	330	350	334	317
Lard and compound fat[d]	247	248	247	246	245	244	243	249	243	237	241	235	229
Other fats[d]	238	253	254	256	251	253	254	268	272	276	261	265	269
All fats[d]	1243	1265	1265	1266	1273	1274	1274	1336	1321	1316	1288	1283	1278
All cereals[f]	4358	4265	4254	4244	4224	4213	4202	4102	4091	3974	3968	3910	3843
Fruit[g]	2315	2683	2729	2773	2675	2721	2765	3035	3222	3427	3002	3180	3386
Dried fruit[h]	145	155	156	157	154	155	156	166	170	174	163	166	170
Dried pulses[i]	202	167	165	164	164	163	162	116	106	96	110	102	91
Nuts[d]	70	78	79	79	77	78	79	85	89	93	84	87	91
Potatoes[j]	4771	4652	4655	4659	4609	4613	4616	4381	4374	4365	4275	4269	4260
Fresh tomatoes[j]	300	341	346	351	340	345	349	383	403	425	378	397	419
Canned tomatoes[d]	164	177	178	180	176	177	178	191	196	202	187	192	198
Other vegetables[k]	2360	2573	2588	2602	2555	2569	2583	2794	2854	2919	2739	2796	2862
Tea[d]	224	232	232	232	230	230	230	241	241	241	235	235	235
Cocoa powder[l]	32	35	35	35	34	35	35	37	38	39	36	37	38
Coffee beans[m]	36	44	44	45	43	44	44	52	54	57	51	53	56
Cocoa butter[n]	54	61	62	63	61	62	63	68	71	75	67	70	73
Beer[o]	25.3	27.7	27.9	28.0	27.8	28.0	28.2	30.0	30.8	31.6	30.3	31.0	31.9
Wines[p]	15.7	19.9	20.5	21.1	20.1	20.6	21.2	24.0	26.4	29.0	24.3	26.6	29.3
Spirits[q]	12.7	15.2	15.5	15.8	15.2	15.6	15.9	17.6	18.9	20.3	17.7	18.9	20.4
Tobacco[r]	243	274	278	282	275	279	283	302	320	341	305	322	342
Sugar in brewing[d]	77	84	85	85	85	85	86	91	94	96	92	94	97
Sugar for foods	2650	2748	2749	2751	2720	2722	2723	2847	2840	2833	2764	2759	2751
All Food Items Index	100	106.9	107.6	108.4	106.2	107.0	107.7	113.0	115.7	118.5	110.7	113.2	116.0

a Million gallons, sales through M.M.B. only
b Million gallons at U.K. conversion rates
c Million dozen including small quantities of exported eggs
d Thousand tons
e Thousand tons filleted weight
f Thousand tons of flour equivalent
g Commercial supplies in all forms except dried fruit
h Thousand tons at dried weight
i Including dried pulses subsequently canned
j Thousand tons commercial supplies
k Thousand tons commercial supply including fresh vegetables for canning and freezing and any imported canned vegetables
l Including cocoa powder in chocolate, etc.
m Including coffee in coffee essences
n Also included in "other fats", basic figure is a rough estimate
o Million bulk barrels
p Million gallons
q Million proof gallons
r Million lb.
s Thousand tons including all other sugar, honey, glucose, etc.

Table 6. Changes in Intensity of Production

	Yield per acre of crops (% p.a.) 1957-65	1965-75	
Wheat	1.75	1.50	
Barley	1.75	1.50	
Oats	1.25	1.25	
Mixed corn	1.50	1.25	
Pulses	no change	no change	
Sugar beet	.80	.80	With no improvement in % sugar or rate of extraction
Potatoes	.30	.30	With some improvement in ratio of marketable potatoes to production
Vegetables	no change	no change	
Dessert apples and pears	3	$2\frac{1}{2}$	)
Plums	$1\frac{1}{2}$	$1\frac{1}{2}$	) Yield per acre of trees over 7 years
Other orchard fruit	2	2	)
Soft fruit	2	2	Yield per acre
	Yield of livestock (% p.a.) 1956-65	1965-75	
Milk per cow	1	1	Subject to further response to price
Beef per calf reared	no change	no change	With similar allowance per unit of livestock imported
Mutton per ewe for breeding	$\frac{1}{2}$	$\frac{1}{2}$	Owing to change in the number of lambs reared per ewe
Pigmeat per sow	0	$\frac{1}{4}$	Due to increase in litter size
Eggs per hen	2	$1\frac{1}{2}$	

Table 7a. Scale of Production of Crops: Estimates of equilibrium at 1955-9 prices

	Average 1954-5 to 1959-60	Average yearly increase 1954-60	Assumed long run trend	Rate of adjustment	Equilibrium acreage	Observed - Equilibrium: Scale of production	Quantity of production	Value of production
	000 acres	000 acres			000 acres	000 acres	000 tons	£m.
Wheat	2158	-57	10	.60	2053	105	133	3.9
Barley	2519	223	80	.61	2803	-284	-341	-9.2
Oats	2389	-100	-50	.60	2272	117	115	2.9
Mixed corn and rye	414	-70	-10	.60	307	107	107	2.7
All grain	7480	-5	30	.33	7435	45	14	.3
Peas and beans (for fodder)	114	-10	-2	.66	101	13	11	.3
Peas (dry for human consumption)	94	-16	0	.33	46	48	21	1.4
Potatoes	865	-20	0	.33	(805)	(60)	(453)	2.3
Sugar beet	432	1	none allowed	X	(432)	(0)	(0)	(0)
	cropped area							
Tomatoes (outdoor)	.776	-.137	0	.33	.365	.411	} 16	1.9
(indoor)	2.769	-.094	0	.25	2.393	.376		
Other vegetables (outdoor)	382	.5	0	.33	397	-15	-77	-1.8
(indoor)	1.434	-.074	0	.23	2.111	.323	6	-
	June census							
Soft fruit	42	0	0	.33	42	0	0	0
Orchard fruit	267	-6	0	X	X	X	probably 0	-
Hope	20	0	none allowed	X	(20)	(0)	(0)	-
Linseed and flax	12	-5	?	?	0	12)	19)	.4
Flowers (in open)	28.3	+.5	0	.33	29.8	-1.5	-£1m.	-1
							Total	3.8

X = not considered
? = irrelevant

Table 7b. Scale of Production of Livestock: Trend and Adjustment towards equilibrium

		Average scale of production 1955-9	Average annual increase 1954-60	Assumed trend	Rate of adjustment	Equilibrium scale of production	Observed - equilibrium production	
Cows	000	3892	+43	+15	.20	4092	-200	Average of June and Dec. census nos. of all cows
Calvee reared	000	2472	+95	+15	.70	2695	-223	Average of June and Dec. censue nos. of calvee under 1 year
Cattle importe	000	506	-	-	-	506	0	Net imports incl. fat cattle imports for immediate slaughter
Ewes	000	9767	395	+62	.25	11285	-1518	Average of June and Dec. census nos. of ewes for breeding
Sowe	000	728	-7	+7	.36	709	+19	Average of June and Dec. census nos. of sows for breeding
Adult fowle	m.	66.4	3.3	+.5	.33	75.8	-9.4	Average no. of hene on all holdings throughout year incl. those on holdings under one acre

	Output in 1955-9	Slaughtering	Average yearly increase in nos. in excess of assumed trend 1955-9	Slaughterings adjusted for stock increase	Expected level of slaughtering in equilibrium	Equilibrium output
Milk	2096 m.galls	-	-	-	-	2203 m.galls
Beef and veal	773 000 tons	2774 000 cattle	150 000 cattle	2924	3123	870 000 tons
Mutton and lamb	201 000 tons	9938 000 sheep	382 000 sheep	10320	11924	241 000 tons
Wool	74 m. lb.	-	-	-	-	85 m. lb.
Pigmeat	612 000 tons	10385 000 pigs	-241 000 pigs	10144	9879	582 000 tons
Eggs	948 m. doz.	-	-	-	-	1082 m. doz.

	Excess of observed over equilibrium		
	Output		Value of production - feed inputs adjusted for stock increases in both cases
	Quantity	Value	
Milk	-107	-£17.3	-£10
Beef	-97	-£25.0	-£13.3
Mutton	-40	-£13.2	-£12.1
Wool	-11	-£2.4	
Pigmeat	+28	+£8.3	+£1.1
Eggs	-134	-£22.7	-£5.7
		-£72.3	-£40.0

Table 7c. Scale of Production of Forage Crops other than Grain and Pulses

	Average 1954-5 to 1959-60	Average yearly increase 1954-60	Assumed long run trend	Estimated equilibrium acreage 1954-5 to 1959-60	Observed - equilibrium
	000 acres	000 acres	000 acres	000 acres	000 acres
Rape	149	-11	-2	119	+30
Kale and cattle cabbages	352	+12	+8	382	-30
Turnips, swedes and fodder beet	546	-27	-15	506	+40
Mangolds	167	-12	-3	147	+20
Vetches and tares	30	-1	-1	28	+2
Mustard	34	-1	slight negative	34	0
Lucerne and temporary grass	6,327	+145	residual after other crops have been considered	6,657	-325
Permanent grass	13,383	-65		13,283	+100

Table 8. Long Run Pattern of Responses of Scale of Production to Price and Effect of Price on Milk Yields

	Equilibrium scale of production 1955-9, 000	Elasticity with respect to own price	Elasticity with respect to other farm products	Effect of 1% rise in price on scale of production: Milk	Fat cattle	Fat sheep and lambs	Fat pigs	Eggs	Wheat	Barley	Oats	Vege-tables	All farm products	Feedingstuffs: protein	Feedingstuffs: cereals	All products incl.feed
Cows	4092	.50	-.13	20.6	+6.0	-3.3	-2.2	-2.2	-0.9	-1.1	-.8	-1.1	15.0	5.5	5.5	4.0
Calves reared	2695	.77	-.35	7.7	20.7	-4.3	-4.3	-2.2	-1.6	-2.0	-1.4	-1.4	11.2	1.4	1.4	8.4
Ewes	11285	1.29	-1.22	-38.0	-38.0	146.0	-19.0	-6.0	-8.0	-10.0	-7.0	-12.0	8.0	+24.0	36.0	58.0
Sows	709	4.09	-2.20	-.8	-1.2	-.6	29.0	-11.2	.1	.2	.1	0	15.6	-2.9	-9.9	2.8
Adult fowls	75781	2.00	-1.41	-70	-50	-20	-960	1510	10	20	10	0	450	-90	-270	+90
Wheat	2053	1.27	-1.09	-3.0	-4.3	-2.4	1.3	1.3	26.0	-12.0	-2.0	-1.2	3.7	-	-	3.7
Barley	2803	1.32	-1.16	-3.7	-5.2	-3.0	1.5	1.5	-12.0	37.0	-10.0	-1.5	4.6	-	1.5	6.1
Oats and other grain	2579	.85	-.73	-2.5	-3.4	-2.0	1.0	1.0	-2.0	-10.0	22.0	-1.0	3.1	-	2.2	5.3
Vegetables	397	1.26	-.81	-.8	-.8	-.8	0	0	-.3	-.3	-.2	5.0	1.8	+.2	.3	2.3

	Elasticity with respect to all farm products' prices	Elasticity with respect to feed prices	Elasticity with respect to all prices including feed
All above products weighted by gross output	.61	-.20	.41
Weighted by net output	.41	-.17	.24

Effect of price on yield of milk per cow: % change in milk yield = +.20% change in milk price - .07% change in beef price - .20% change in feed price.

Other price effects used in forecasting:

Tomatoes	elasticity of supply of 1.0
Soft fruit	elasticity of supply of 1.0, also -.70 with respect to vegetables
Orchard fruit	elasticity of supply of .1 for 1965, .3 for 1975
Poultry meat	elasticity of supply is considered as very large
Beans and peas for forage	elasticity of supply of .5 with respect to price of protein feed
Dried peas for human consumption	elasticity of supply 2.5 with respect to own price

Table 9. Rates of Subsidy, 1955-9

	Deficiency payments as a % of the price of products received by farmers: Wheat	Barley	Oats	Fat cattle	Fat sheep	Fat lambs	Pigs under 10 score	Pigs over 10 score	Eggs	Milk	Wool	Potatoes
1954-5	31	14	none	2	22	13	33	36	25	13	7	17
1955-6	25	12	2	7	11	9	18	19	14	10	none	none
1956-7	24	13	7	22	19	14	18	20	22	6	3	1
1957-8	30	26	18	19	22	17	19	20	33	4	9	8
1958-9	26	23	17	5	23	20	13	14	26	3	39	7
1959-60	25	26	18	6	42	29	9	10	28	3	18	1
Average	27	19	11	10	23	17	19	20	25	6.4	13	5.7
Associated grants, average annual payments				Calf subsidy £11.8m. Hill cattle subsidy £2.8m.							Hill sheep subsidy £.5m.	
Average support rate	27	19	11	17.3	23	17	19	20	25.2	6.4*	16	5.7
Forecast support rate 1965	17	17	17	25	20		15		16	1.5	16	5.7
Forecast support rate 1975	14	14	14	18	17		12		12	none	16	5.7
Expected changes in price associated with changes in support rates, liquid milk prices, etc.												
Expected change in price: 1965	-10.0	-2.0	6.0	7.7	no change		-4.5		-9.2	-2.0	no change	
1975	-13.0	-5.0	3.0	.7	-3.0		-7.5		-13.2	-3.5	no change	

*This is not comparable with forecast support rates, being consistent with lower liquid milk prices in 1954-56.

Table 10. Provisional Forecasts of Scale and Quantity of Production

	Equilibrium state 1955-9		Including effect of trends due to technical progress, etc. 1965	1975	Forecast for 1965 With low feed prices P	Q	With high feed prices P	Q	Forecast for 1975 With low feed prices P	Q	With high feed prices P	Q
Scale of Production												
Cows	4,092	000	4,212	4,362	4,420	4,301	4,226	4,170	4,531	4,385	4,337	4,244
Calves reared	2,695	000	2,815	2,965	3,098	3,053	3,003	2,982	3,141	3,088	3,046	3,013
Ewes	11,285	000	11,782	12,402	11,247	11,467	11,884	11,987	11,908	12,214	12,545	12,754
Sows	709	000	765	835	902	907	715	717	940	946	753	757
Adult fowls	75,781	000	79,781	84,781	74,414	74,820	69,434	69,623	79,414	77,160	71,669	71,998
Wheat	2,053	000 acres	2,133	2,233	1,714	1,731	1,840	1,848	1,811	1,839	1,937	1,957
Barley	2,803	000 acres	3,443	4,243	3,196	3,217	3,376	3,386	3,991	4,025	4,171	4,196
Oats and other grain	2,579	000 acres	2,099	1,499	2,098	2,113	2,236	2,243	1,495	1,519	1,632	1,649
Vegetables	397	000 acres	397	397	397	401	396	398	408	426	407	423
Pulses for food	46	000 acres	46	46	37	37	37	37	37	37	37	37
Pulses for fodder	93	000 acres	85	65	80	80	88	88	60	60	68	68
Sugar beet	432	000 acres	432	432	432	432	432	432	432	432	432	432
Potatoes	(805)	000 acres	(805)	(805)	(805)	821	(805)	821	(805)	745	(805)	745
Hops	(20)	000 acres	(20)	(20)	(20)	22	(20)	22	(20)	24	(20)	24
Production, Sales or Output												
Milk[a]	2,203	m. galls	2,450	2,772	2,608	2,511	2,425	2,381	2,922	2,793	2,725	2,647
Beef[b]	871	000 tons	905	946	983	971	957	951	995	981	969	960
Mutton[b]	241	000 tons	262	288	250	253	264	265	276	282	291	295
Pigmeat[b]	582	000 tons	628	703	740	746	587	590	791	798	634	639
Eggs[c]	1,082	m. doz.	1,323	1,587	1,234	1,241	1,151	1,154	1,487	1,444	1,342	1,348
Wheat[d]	2,601	000 tons	3,081	3,649	2,475	2,500	2,657	2,669	2,960	3,005	3,165	3,198
Barley[d]	3,362	000 tons	4,707	6,564	4,370	4,398	4,615	4,629	6,174	6,227	6,453	6,492
Oats and other grain[d]	2,542	000 tons	2,285	1,816	2,284	2,300	2,434	2,442	1,812	1,841	1,978	1,999
Vegetables[e]	2,061	000 tons	2,061	2,061	2,061	2,133	2,106	2,117	2,170	2,266	2,165	2,250
Pulses for food[e]	22	000 tons	22	22	18	18	18	18	18	18	18	18
Pulses for fodder[d]	82	000 tons	69	53	65	65	72	72	49	56	49	56
Sugar[f]	662	000 tons	704	757	704	704	704	704	757	757	757	757
Potatoes[e]	3,977	000 tons	(4,074)	(4,186)	(4,074)	4,160	(4,074)	4,160	(4,186)	3,879	(4,186)	3,879
Fruit[e]	768	000 tons	878	1,032	878	878	878	878	1,032	1,032	1,032	1,032

P In addition to trend effects allowance has been made for price changes associated with changed support rates for farm products measured in Table 9.
Under low feed price assumptions the effect of a further fall of 10½% in grain prices to farmers has been allowed for as well as the effect of a fall of 15% in the price of low protein feeds and 10% in the price of high protein feeds.
Under the high feed price assumption a rise of 5% in the price of high protein feeds is allowed for.
Pulses for food are assumed to be 8% cheaper under all assumptions.

Q also includes the effect of reductions in the pooled milk price due to adjustments of supply to the demand situation indicated by the high population and medium income assumptions. These reductions are 5.8%, 2.7%, 7.3% and 4.7% in the respective columns. Q also includes the effects of a fall of 60 thousand acres in the acreage of potatoes in 1975 on the production of other crops and an automatic increase in acreage of hops to meet increased demand in 1965 and 1975.

a Sales of milk through the Milk Marketing Board.
b Production of meat in U.K., including slaughter of imported livestock, excluding some small scale slaughtering.
c Production of eggs for food including backyard production.
d Harvested production.
e Output for food in U.K. from holdings over an acre.
f Production of beet sugar in U.K.

Table 11. Provisional Forecast of Production compared with past achievements

	1925	1938=100	1955-9	1955-9 Equilibrium level	1965 Including trends, etc.	1975 Including trends, etc.	Forecast for 1965 With low feed prices		Forecast for 1965 With high feed prices		Forecast for 1975 With low feed prices		Forecast for 1975 With high feed prices	
							P	Q	P	Q	P	Q	P	Q
Milk sales	90	100	144	152	169	191	180	173	167	164	201	193	188	183
Beef	101	100	128	144	149	156	162	160	158	157	164	162	160	158
Mutton	81	100	95	114	124	136	118	120	125	125	131	133	138	140
Pigmeat	81	100	122	116	125	140	147	148	117	117	157	159	126	127
Eggs	43	100	170	195	238	286	222	224	207	208	268	260	242	243
Wheat[a]	71	100	138	131	155	184	125	126	134	134	149	151	159	161
Barley[a]	127	100	332	370	518	722	481	483	508	509	679	684	710	714
Oats and other grain[a]	119	100	133	122	110	87	110	110	117	117	87	88	95	96
All grain[a]	102	100	172	172	203	243	184	186	196	197	221	224	234	236
Vegetables	70[b]	100[b]	111	115	115	115	115	119	117	118	121	126	121	125
Potatoes for food	90[b]	100[b]	125	(116)	(119)	(122)	(119)	121	(119)	121	(122)	113	(122)	113
Fruit	87[b]	100[b]	150	150	171	201	171	171	171	171	201	201	201	201
Sugar	15[b]	100[b]	146	146	155	167	155	155	155	155	167	167	167	167

P including effects of government policy indicated by changed rates of subsidy

Q including also automatic reaction on price or quantity due to actions of milk and potato marketing boards.

a harvested production

b quinquennial averages. 1924-8 or 1923-7 for 1925: 1934-8 for 1938.

Table 12. Provisional Forecasts of Net Trade in some Foodstuffs and Supplies of Fish

	Net imports observed 1955-9		Expected supplies at constant prices 1965	1975	
Beef	389	000 tons	429	445	
Mutton	343	000 tons	404	460	
Pigmeat - 1	352	000 tons	537	585	With low feed prices
- 2	"	"	440	480	With high feed prices
Poultrymeat	12	000 tons	10	10	
Eggs and egg products - 1	64	m.doz.egg equivalent	30	30	With low feed prices
- 2	"	"	25	25	With high feed prices
Butter	367	000 tons	348	350	
Cheese	124	000 tons	123	116	
Other milk products	31	m.galls.milk equivalent	0	0	As whole milk equivalent
All milk products	2335	do.	2197	2192	do.
Tomatoes	364	000 tons	420	475	Including canned etc. as fresh equivalent.
Fruit	1547	000 tons	1903	2175	do.
Vegetables (excl. potatoes)	328	000 tons	328	360	do.
Potatoes	495	000 tons	495	495	For food only
Fish - British landings for food within U.K.	396	000 tons filleted weight	355	312	As filleted weight
- Net trade in canned fish plus foreign landings	111	do.	137	160	do.

Table 13. Observed and Expected Distribution of Imports of Meat and Milk Products, 000 tons: provisional forecasts at constant prices

		1954-8	1959	1960	1965	1975
Beef and Veal	Argentina	202	212	204	190	120
	Australia	112	109	65	120	170
	New Zealand	52	7	21	112	132
	Other	18	28	74	23	39
	Total (gross)	384	356	354	445	461
Mutton and Lamb	New Zealand	250	295	308	314	330
	Australia	38	36	31	50	100
	Argentina	43	24	31	40	30
	Others	9	9	14	-	-
	Total	340	364	384	404	460
Pork[a]		22	14	22	50	60
Danish bacon[a]		225	249	283	270	320
Other bacon and ham[a]		110	104	129	120	100
All pigmeat[a]		357	367	434	440	480
Butter	New Zealand	143	162	147	151	167
	Australia	58	64	58	52	48
	Denmark	91	95	98	87	80
	Netherlands	16	13	17	8	5
	Others	38	66	88	50	50
	Total	346	400	408	348	350
Cheese	New Zealand	86	73	77	67	55
	Australia	14	14	15	14	14
	Denmark	11	10	10	10	12
	Netherlands	8	15	9	12	15
	Others	8	23	21	20	20
	Total	127	135	132	123	116

a The projections here are consistent with 1955-9 grain prices.

Table 14. Supply Elasticities Assumed for some Imported Foodstuffs

	1965	1975
Beef	2.0	2.5+
Mutton	1.5	1.9
Pigmeat	5.0	6.25
Fruit	2.0	2.50
Vegetables	2.0	2.50
Eggs[a]	3.0	3.75
Butter[b]	2.25	2.81
Cheese[b]	3.67	4.60
Canned meat[c]	3.0	3.75+
Fish - British landings	1.0	1.0
- Imported	2.0	2.5

a This elasticity refers to shell eggs only, not to egg products.

b There is some cross elasticity of supply between imported butter and cheese; for both these products as a group a supply elasticity of 2.0 and 2.5 is assumed.

c There is some cross elasticity between canned meat and imported beef; but this is not assumed to be very large.

Table 15. Price Responses of Demand at Retail

	Fall in quantity consumed in U.K. for each 1% rise in prices of:													
	Beef	Mutton	Pig-meat	Canned meat	Poultry	Fish	Eggs	Butter	Cheese	Vege-tables	Fruit	Toma-toes	Sum of all price effects	Quantity
Beef	12.0	-3.0	-2.1	-.3	-.6	-.5	-.1	0	-.2	-.1	-.1	0	5.0	000 tons
Mutton	-3.0	8.2	-.9	-.1	-1.0	-.4	-.1	0	0	-.1	-.1	0	2.5	do.
Pigmeat	-2.1	-.9	7.1	-.4	0	-.4	-.1	0	-.2	-.1	-.1	0	2.8	do.
Canned meat (imported)	-.3	-.1	-.4	2.0	-.2	-.2	-.1	0	0	0	-.1	0	.6	do.
Poultry	-.6	-1.0	0	-.2	5.0	-1.7	-.1	0	0	-.1	-.1	0	1.2	do.
Fish (filleted weight)	-.5	-.4	-.4	-.2	-1.7	6.3	-.1	0	-.1	-.1	-.1	0	2.7	do.
Eggs	-.2	-.2	-.2	-.2	-.2	-.2	3.0	0	-.2	-.1	-.1	0	1.4	m. doz.
Butter (as milk)	0	0	0	0	0	0	0	12.8	0	0	0	0	12.8	m. galls.
Cheese (as milk)	-.2	0	-.2	0	0	-.1	-.1	0	.8	0	-.1	0	.1	do.
Vegetables (excl. potatoes)	-.3	-.3	-.3	0	-.3	-.3	-.3	0	0	10.0	-3.0	-1.0	4.2	000 tons
Fruit	-.4	-.4	-.4	-.2	-.2	-.4	-.4	0	-.2	-2.5	15.0	-.3	9.6	do.
Tomatoes	0	0	0	0	0	0	0	0	0	-.5	-.3	2.4	1.6	do.
Elasticity with respect to own price	1.03	1.51	.74	1.04	2.58	1.24	.30	.60	.16	.42	.65	.52		
With respect to all other prices given	-.60	-1.05	-.45	-.73	-1.96	-.71	-.16	0	-.14	-.24	-.23	-.18		

Table 16. Estimated Price Responses at Retail including distinction between some home produced and imported products

		Fall in quantity consumed corresponding to a 1% rise in price of																		
		Beef		Mutton		Pigmeat		Canned meat	Poultry	Fish		Eggs	Butter	Cheese	Vegetables		Fruit		Tomatoes	
		H	I	H	I	H	I			H	I				H	I	H	I	H	I
Beef	H	15.00	-7.00	-1.20	-.70	-.90	-.30	-.20	-.40	-.20	-.10	-.06	0	-.13	-.04	-.01	-.03	-.03	0	0
	I	-7.00	11.00	-.40	-.70	-.50	-.40	-.10	-.20	-.14	-.06	-.04	0	-.07	-.03	-.02	-.02	-.02	0	0
Mutton	H	-1.20	-.40	6.70	-3.00	-.30	-.10	-.04	-.50	-.13	-.05	-.04	0	0	-.04	-.01	-.02	-.02	0	0
	I	-.70	-.70	-3.00	7.50	-.35	-.15	-.06	-.50	-.15	-.07	-.06	0	0	-.04	-.01	-.03	-.03	0	0
Pigmeat	H	-.90	-.50	-.30	-.35	9.50	-5.00	-.20	0	-.16	-.09	-.07	0	-.12	-.04	-.01	-.03	-.02	0	0
	I	-.30	-.40	-.10	-.15	-5.00	7.50	-.20	0	-.10	-.05	-.02	0	-.08	-.04	-.01	-.03	-.02	0	0
Canned meat	I	-.20	-.10	-.04	-.06	-.20	-.20	2.00	-.20	-.15	-.05	-.10	0	0	0	0	-.05	-.05	0	0
Poultry		-.40	-.20	-.50	-.50	0	0	-.20	5.00	-1.30	-.40	-.10	0	0	-.08	-.02	-.05	-.05	0	0
Fish	H	-.20	-.14	-.13	-.15	-.16	-.10	-.15	-1.30	5.70	-1.10	-.08	0	-.08	-.06	-.03	-.04	-.04	0	0
	I	-.10	-.06	-.05	-.07	-.09	-.05	-.05	-.40	-1.10	2.80	-.02	0	-.02	-.01	0	-.01	-.01	0	0
Eggs		-.12	-.08	-.08	-.12	-.14	-.04	-.20	-.20	-.14	-.06	3.00	0	-.20	-.07	-.03	-.05	-.05	0	0
Butter (as milk)		0	0	0	0	0	0	0	0	0	0	0	12.80	0	0	0	0	0	0	0
Cheese (as milk)		-.13	-.07	0	0	1.12	-.08	0	0	-.07	-.03	-.10	0	-.80	0	0	-.05	-.05	0	0
Vegetables	H	-.12	-.09	-.12	-.12	-.12	-.12	0	-.24	-.15	-.06	-.21	0	0	15.20	-7.00	-1.60	-.80	-.20	-.60
	I	-.03	-.06	-.03	-.03	-.03	-.03	0	-.06	-.06	-.03	-.09	0	0	-7.00	8.80	-.20	-.40	-.05	-.15
Fruit	H	-.12	-.09	-.09	-.09	-.12	-.12	-.10	-.10	-.14	-.06	-.20	0	-.10	-1.30	-.20	17.00	-12.00	-.03	-.80
	I	-.12	-.09	-.09	-.09	-.09	-.09	-.10	-.10	-.14	-.06	-.20	0	-.10	-.60	-.40	-12.00	22.00	-.06	-1.30
Tomatoes	H	0	0	0	0	0	0	0	0	0	0	0	0	0	-.16	-.04	-.04	-.12	2.50	-2.00
	I	0	0	0	0	0	0	0	0	0	0	0	0	0	-.24	-.06	-.06	-.08	-2.00	3.90
Elasticity with respect to own price		1.94	2.83	3.33	2.19	1.55	2.40			1.44	2.52				.75	2.68	2.21	1.38	2.50	1.07
Elasticity with respect to price of product from other source		-.90	-1.80	-1.49	-.88	-.82	-1.42			-.28	-.99				-.34	-2.13	-1.56	-.75	-2.00	-.55
% reduction of price effects at wholesale level		40%		40%		40%		25%	0	40%		0	20%	20%	40%		40%		40%	

H = home produced

I = imported

Table 17. Demand Matrix: Wholesale Level: Effects of each % change in price

		P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_{10}	P_{11}	P_{12}	P_{13}	P_{14}	P_{15}	P_{16}	P_{17}	P_{18}	P_{19}	P_{20}	P_{21}
Home produced beef	X_1	+9.00	-0.72	-0.54	-0.15	-0.09	-0.11	-0.06	-0.02	-0.02	0	0	0	0	-4.20	-0.42	-0.18	-0.01	-0.02	0	0	-0.10
Home produced mutton	X_2	-0.72	+4.02	-0.18	-0.03	-0.05	-0.08	-0.04	-0.02	-0.01	0	0	0	0	-0.24	-1.80	-0.06	-0.01	-0.01	0	0	0
Home produced pigmeat	X_3	-0.54	-0.18	+5.70	-0.15	-0.06	-0.10	-0.07	-0.02	-0.02	0	0	0	0	-0.30	-0.21	-3.00	-0.01	-0.01	0	0	-0.10
Imported canned meat	X_4	-0.12	-0.02	-0.12	+1.50	-0.05	-0.08	-0.10	0	-0.03	0	0	0	0	-0.06	-0.04	-0.12	0	-0.03	0	0	0
Fish - imported	X_5	-0.06	-0.03	-0.05	-0.05	+2.10	-0.66	-0.03	-0.01	-0.01	0	0	0	0	-0.04	-0.04	-0.03	0	-0.01	0	0	-0.03
- home	X_6	-0.12	-0.08	-0.10	-0.10	-0.83	+3.42	-0.07	-0.04	-0.02	0	0	0	0	-0.08	-0.09	-0.06	-0.02	-0.02	0	0	-0.05
Eggs - home and imported	X_7	-0.07	-0.05	-0.08	-0.15	-0.05	-0.09	+3.00	-0.04	-0.03	0	0	0	0	-0.05	-0.07	-0.02	-0.02	-0.03	0	0	-0.16
Home produced vegetables	X_8	-0.07	-0.07	-0.07	0	-0.05	-0.10	-0.21	+9.12	-0.96	-0.12	0	0	0	-0.05	-0.07	-0.07	-4.20	-0.48	-0.36	0	0
Home produced fruit	X_9	-0.07	-0.05	-0.07	-0.08	-0.04	-0.07	-0.20	-0.78	+10.20	-0.02	0	0	0	-0.05	-0.05	-0.07	-0.12	-7.20	-0.48	0	-0.08
Home produced tomatoes	X_{10}	0	0	0	0	0	0	0	-0.08	-0.02	+1.50	0	0	0	0	0	0	-0.02	-0.07	-1.20	0	0
Wheat	X_{11}	0	0	0	0	0	0	0	0	0	0	+100.30	0	0	0	0	0	0	0	0	0	0
Barley	X_{12}	0	0	0	0	0	0	0	0	0	0	0	+128.50	0	0	0	0	0	0	0	0	0
Oats, etc.	X_{13}	0	0	0	0	0	0	0	0	0	0	0	0	+84.70	0	0	0	0	0	0	0	0
Imported beef	X_{14}	-4.20	-0.24	-0.30	-0.08	-0.05	-0.08	-0.04	-0.02	-0.01	0	0	0	0	+6.60	-0.42	-0.24	-0.01	-0.01	0	0	-0.06
Imported mutton	X_{15}	-0.42	-1.80	-0.21	-0.05	-0.06	-0.09	-0.06	-0.02	-0.02	0	0	0	0	-0.42	+4.50	-0.09	-0.01	-0.02	0	0	0
Imported pigmeat	X_{16}	-0.18	-0.06	-3.00	-0.15	-0.04	-0.06	-0.02	-0.02	-0.02	0	0	0	0	-0.24	-0.09	+4.50	-0.01	-0.01	0	0	-0.06
Imported vegetables	X_{17}	-0.02	-0.02	-0.02	0	-0.02	-0.04	-0.09	-4.20	-0.12	-0.03	0	0	0	-0.04	-0.02	-0.02	+5.28	-0.24	-0.09	0	0
Imported fruit	X_{18}	-0.07	-0.05	-0.05	-0.08	-0.05	-0.08	-0.20	-0.36	-7.20	-0.04	0	0	0	-0.05	-0.05	-0.05	-0.24	+13.20	-0.78	0	-0.08
Imported tomatoes	X_{19}	0	0	0	0	0	0	0	-0.12	-0.48	-1.20	0	0	0	0	0	0	-0.02	-0.78	+2.34	0	0
Butter - total	X_{20}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+10.24	0
Cheese - total	X_{21}	-0.08	0	-0.07	0	-0.03	-0.04	-0.10	0	-0.03	0	0	0	0	-0.04	0	-0.05	0	-0.03	0	0	+0.64

Table 18. Supply Matrix: Wholesale Level: Effects of each % change in price. 1965.

		P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_{10}	P_{11}	P_{12}	P_{13}	P_{14}	P_{15}	P_{16}	P_{17}	P_{18}	P_{19}	P_{20}	P_{21}
Home produced beef	X_1	+5.77	-1.20	-1.20	0	0	0	-0.61	-0.39	0	0	-0.45	-0.56	-0.39	0	0	0	0	0	0	+0.10	+0.10
Home produced mutton	X_2	-0.87	+3.36	-0.44	0	0	0	-0.14	-0.28	0	0	-0.18	-0.23	-0.16	0	0	0	0	0	0	-0.04	-0.04
Home produced pigmeat	X_3	-0.98	-0.49	+23.90	0	0	0	-9.23	0	0	0	+0.08	+0.17	+0.08	0	0	0	0	0	0	-0.04	-0.04
Imported canned meat	X_4	0	0	0	+6.00	0	0	0	0	0	0	0	0	0	-1.00	0	0	0	0	0	0	0
Fish - imported	X_5	0	0	0	0	+2.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- home	X_6	0	0	0	0	0	+4.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eggs - home and imported	X_7	-0.83	-0.33	-15.91	0	0	0	+26.23	0	0	0	+0.17	+0.33	+0.17	0	0	0	0	0	0	-0.06	-0.06
Home produced vegetables	X_8	-4.15	-4.15	0	0	0	0	0	+25.96	-1.28	0	-1.55	-1.55	-1.04	0	0	0	0	0	0	-0.20	-0.20
Home produced fruit	X_9	0	0	0	0	0	0	0	-0.64	+1.75	0	0	0	0	0	0	0	0	0	0	0	0
Home produced tomatoes	X_{10}	0	0	0	0	0	0	0	0	0	+1.00	0	0	0	0	0	0	0	0	0	0	0
Wheat	X_{11}	-6.21	-3.47	+1.88	0	0	0	+1.88	-1.73	0	0	+37.55	-17.33	-2.89	0	0	0	0	0	0	-0.21	-0.21
Barley	X_{12}	-7.11	-4.10	+2.05	0	0	0	+2.05	-2.05	0	0	-16.41	+50.59	-13.67	0	0	0	0	0	0	-0.24	-0.24
Oats, etc.	X_{13}	-3.68	-2.17	+1.08	0	0	0	+1.08	-1.08	0	0	-2.17	-10.83	+23.82	0	0	0	0	0	0	-0.13	-0.13
Imported beef	X_{14}	0	0	0	-1.00	0	0	0	0	0	0	0	0	0	+9.00	0	0	0	0	0	0	0
Imported mutton	X_{15}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+5.20	0	0	0	0	0	0
Imported pigmeat	X_{16}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+17.70	0	0	0	0	0
Imported vegetables	X_{17}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+7.20	0	0	0	0
Imported fruit	X_{18}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+31.80	0	0	0
Imported tomatoes	X_{19}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+7.00	0	0
Butter - total	X_{20}	+1.11	-1.27	-0.84	0	0	0	-0.84	-0.42	0	0	-0.34	-0.42	-0.31	0	0	0	0	0	0	+47.86	-7.00
Cheese - total	X_{21}	+0.53	-0.65	-0.44	0	0	0	-0.44	-0.22	0	0	-0.18	-0.22	-0.16	0	0	0	0	0	0	-7.00	+13.86

Table 19. Supply Matrix: Wholesale Level: Effects of each % change in price. 1975.

		P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_{10}	P_{11}	P_{12}	P_{13}	P_{14}	P_{15}	P_{16}	P_{17}	P_{18}	P_{19}	P_{20}	P_{21}
Home produced beef	X_1	+5.77	-1.20	-1.20	0	0	0	-0.61	-0.39	0	0	-0.45	-0.56	-0.39	0	0	0	0	0	0	-0.11	-0.11
Home produced mutton	X_2	-0.95	+3.66	-0.48	0	0	0	-0.15	-0.30	0	0	-0.20	-0.25	-0.18	0	0	0	0	0	0	-0.05	-0.05
Home produced pigmeat	X_3	-1.01	-0.50	+24.50	0	0	0	-9.47	0	0	0	+0.08	+0.17	+0.08	0	0	0	0	0	0	-0.04	-0.04
Imported canned meat	X_4	0	0	0	+7.25	0	0	0	0	0	0	0	0	0	-1.25	0	0	0	0	0	0	0
Fish - imported	X_5	0	0	0	0	+3.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- home	X_6	0	0	0	0	0	+5.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eggs - home and imported	X_7	-0.94	-0.37	-17.97	0	0	0	+29.76	0	0	0	+0.19	+0.35	+0.19	0	0	0	0	0	0	-0.07	-0.07
Home produced vegetables	X_8	-4.16	-4.16	0	0	0	0	0	+25.97	-1.38	0	-1.56	-1.56	-1.04	0	0	0	0	0	0	-0.21	-0.21
Home produced fruit	X_9	0	0	0	0	0	0	0	-0.69	+3.31	0	0	0	0	0	0	0	0	0	0	0	0
Home produced tomatoes	X_{10}	0	0	0	0	0	0	0	0	0	+1.25	0	0	0	0	0	0	0	0	0	0	0
Wheat	X_{11}	-7.03	-3.92	+2.12	0	0	0	+2.12	-1.96	0	0	+42.49	-19.61	-3.27	0	0	0	0	0	0	-0.25	-0.25
Barley	X_{12}	-8.04	-4.64	+2.32	0	0	0	+2.32	-2.32	0	0	-18.57	+57.24	-15.47	0	0	0	0	0	0	-0.29	-0.29
Oats, etc.	X_{13}	-4.11	-2.42	+1.21	0	0	0	+1.21	-1.21	0	0	-2.42	-12.10	+26.62	0	0	0	0	0	0	-0.15	-0.15
Imported beef	X_{14}	0	0	0	-1.25	0	0	0	0	0	0	0	0	0	+11.25	0	0	0	0	0	0	0
Imported mutton	X_{15}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+6.50	0	0	0	0	0	0
Imported pigmeat	X_{16}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+22.13	0	0	0	0	0
Imported vegetables	X_{17}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+9.00	0	0	0	0
Imported fruit	X_{18}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+39.75	0	0	0
Imported tomatoes	X_{19}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+8.75	0	0
Butter - total	X_{20}	+1.28	-1.40	-0.93	0	0	0	-0.93	-0.47	0	0	-0.38	-0.47	-0.34	0	0	0	0	0	0	+59.18	-8.25
Cheese - total	X_{21}	+0.63	-0.70	-0.47	0	0	0	-0.47	-0.23	0	0	-0.19	-0.23	-0.17	0	0	0	0	0	0	-8.25	+16.68

Table 20. Final Forecasts 1965. Assumption Aa, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773 000 tons	971	803	168	17.0	909
Home produced mutton	X_2	201 000 tons	254	212	42	12.7	233
Home produced pigmeat	X_3	611 000 tons	746	649	97	8.9	656
Imported canned meat	X_4	192 000 tons	210	199	11	3.3	197
Fish - imported	X_5	111 000 tons	137	113	24	5.5	124
- home	X_6	396 000 tons	355	395	-40	-3.7	370
Eggs - home and imported	X_7	1012 m. doz.	1271	1111	160	11.0	1141
Home produced vegetables	X_8	2032 000 tons	2133	2208	-75	1.6	2221
Home produced fruit	X_9	768 000 tons	878	888	-10	1.7	876
Home produced tomatoes	X_{10}	100 000 tons	84	114	-30	-11.4	95
Wheat	X_{11}	2734 000 tons	2502	2665	-163	0.3	2697
Barley	X_{12}	3021 000 tons	4404	3408	996	5.9	4193
Oats, etc.	X_{13}	2764 000 tons	2300	2844	-544	-3.7	2523
Imported beef	X_{14}	389 000 tons	429	404	25	7.2	367
Imported mutton	X_{15}	343 000 tons	404	363	41	8.0	362
Imported pigmeat	X_{16}	352 000 tons	537	371	166	9.0	378
Imported vegetables	X_{17}	328 000 tons	328	357	-29	-1.5	339
Imported fruit	X_{18}	1547 000 tons	1903	1790	113	2.9	1811
Imported tomatoes	X_{19}	364 000 tons	420	404	16	0.6	416
Butter - total	X_{20}	2151) in milk equivalent, m. galls.	2213	2308	-95	-1.1	2300
Cheese - total	X_{21}	498)	572	536	36	2.9	534

Table 21. Final Forecasts 1965. Assumption Ab, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	971	808	163	16.3	910
Home produced mutton	X_2	201	253	215	38	11.8	234
Home produced pigmeat	X_3	611	746	657	89	8.3	663
Imported canned meat	X_4	192	210	200	10	3.0	199
Fish - imported	X_5	111	137	113	24	5.3	124
- home	X_6	396	355	399	-44	-4.4	372
Eggs - home and imported	X_7	1012	1271	1122	149	10.3	1150
Home produced vegetables	X_8	2032	2133	2221	-88	0.8	2232
Home produced fruit	X_9	786	878	904	-26	-0.5	879
Home produced tomatoes	X_{10}	100	84	115	-31	-12.3	96
Wheat	X_{11}	2734	2500	2657	-157	0.3	2687
Barley	X_{12}	3021	4398	3413	985	5.8	4183
Oats, etc.	X_{13}	2764	2300	2844	-544	-3.7	2518
Imported beef	X_{14}	389	429	406	23	6.8	371
Imported mutton	X_{15}	343	404	366	38	7.4	365
Imported pigmeat	X_{16}	352	537	375	162	8.7	383
Imported vegetables	X_{17}	328	328	359	-31	-2.0	342
Imported fruit	X_{18}	1547	1903	1820	83	1.9	1844
Imported tomatoes	X_{19}	364	420	409	11	-0.3	422
Butter - total	X_{20}	2151	2207	2333	-126	-1.7	2318
Cheese - total	X_{21}	498	569	540	29	2.0	536

Table 22. Final Forecasts 1965. Assumption Ac, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	971	812	159	15.7	912
Home produced mutton	X_2	201	253	217	36	11.1	235
Home produced pigmeat	X_3	611	746	663	83	7.8	668
Imported canned meat	X_4	192	210	201	9	2.8	200
Fish - imported	X_5	111	137	115	22	4.8	126
- home	X_6	396	355	401	-46	-4.8	374
Eggs - home and imported	X_7	1012	1271	1133	138	9.6	1159
Home produced vegetables	X_8	2032	2133	2233	-100	0.1	2243
Home produced fruit	X_9	768	878	918	-40	-2.4	884
Home produced tomatoes	X_{10}	100	84	117	-33	-13.6	98
Wheat	X_{11}	2734	2500	2649	-149	0.3	2677
Barley	X_{12}	3021	4398	3450	948	5.6	4188
Oats, etc.	X_{13}	2764	2299	2844	-545	-3.8	2512
Imported beef	X_{14}	389	429	409	20	6.4	374
Imported mutton	X_{15}	343	404	370	34	6.8	369
Imported pigmeat	X_{16}	352	537	378	159	8.5	387
Imported vegetables	X_{17}	328	328	361	-33	-2.5	346
Imported fruit	X_{18}	1547	1903	1850	53	0.8	1876
Imported tomatoes	X_{19}	364	420	414	6	-1.2	428
Butter - total	X_{20}	2151	2202	2351	-149	-2.2	2331
Cheese - total	X_{21}	498	566	543	23	1.3	539

Table 23. Final Forecasts 1965. Assumption Ba, low feod prices.

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	969	799	170	17.6	905
Home produced mutton	X_2	201	254	212	42	13.1	233
Home produced pigmeat	X_3	611	747	647	100	9.2	655
Imported canned meat	X_4	192	210	198	12	3.5	197
Fish - imported	X_5	111	137	112	25	5.8	123
- home	X_6	396	355	393	-38	-3.5	369
Eggs - home and imported	X_7	1012	1271	1104	167	11.5	1134
Home produced vegetables	X_8	2032	2138	2193	-55	2.5	2211
Home produced fruit	X_9	768	878	886	-8	2.1	876
Home produced tomatoes	X_{10}	100	84	113	-29	-11.0	95
Wheat	X_{11}	2734	2503	2619	-116	0.8	2695
Barley	X_{12}	3021	4401	3344	1057	6.4	4178
Oats, etc.	X_{13}	2764	2302	2844	-542	-3.6	2533
Imported beef	X_{14}	389	429	402	27	7.5	365
Imported mutton	X_{15}	343	404	361	43	8.3	361
Imported pigmeat	X_{16}	352	537	370	167	9.1	376
Imported vegetables	X_{17}	328	328	354	-26	-1.0	335
Imported fruit	X_{18}	1547	1903	1784	119	3.1	1803
Imported tomatoes	X_{19}	364	420	403	17	0.8	414
Butter - total	X_{20}	2151	2222	2297	-75	-0.6	2295
Cheese - total	X_{21}	498	576	533	43	3.7	530

Table 24. Final Forecasts 1965. Assumption Bb, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	970	804	166	16.9	908
Home produced mutton	X_2	201	254	214	40	12.4	234
Home produced pigmeat	X_3	611	746	654	92	8.4	660
Imported canned meat	X_4	192	210	199	11	3.3	198
Fish - imported	X_5	111	137	113	24	5.5	124
- home	X_6	396	355	396	-41	-4.0	371
Eggs - home and imported	X_7	1012	1271	1115	156	10.7	1143
Home produced vegetables	X_8	2032	2138	2205	-67	1.7	2221
Home produced fruit	X_9	768	878	901	-23	0.0	879
Home produced tomatoes	X_{10}	100	84	115	-31	-12.2	96
Wheat	X_{11}	2734	2503	2616	-113	0.7	2685
Barley	X_{12}	3021	4401	3408	993	6.0	4190
Oats, etc.	X_{13}	2764	2302	2844	-542	-3.7	2527
Imported beef	X_{14}	389	429	404	25	7.1	368
Imported mutton	X_{15}	343	404	365	39	7.7	364
Imported pigmeat	X_{16}	352	537	374	163	8.8	381
Imported vegetables	X_{17}	328	328	356	-28	-1.5	339
Imported fruit	X_{18}	1547	1903	1815	88	2.1	1837
Imported tomatoes	X_{19}	364	420	407	13	0.0	420
Butter - total	X_{20}	2151	2217	2318	-101	-1.2	2310
Cheese - total	X_{21}	498	574	536	38	2.7	532

Table 25. Final Forecasts 1965. Assumption Bc, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	971	808	163	16.4	909
Home produced mutton	X_2	201	254	216	38	11.7	235
Home produced pigmeat	X_3	611	746	661	85	8.1	666
Imported canned meat	X_4	192	210	200	10	3.0	199
Fish - imported	X_5	111	137	114	23	5.1	125
- home	X_6	396	355	399	-44	-4.5	373
Eggs - home and imported	X_7	1012	1271	1126	145	10.0	1153
Home produced vegetables	X_8	2032	2138	2217	-79	1.0	2231
Home produced fruit	X_9	768	878	915	-37	-1.9	882
Home produced tomatoes	X_{10}	100	84	116	-32	-13.1	97
Wheat	X_{11}	2734	2502	2610	-108	0.7	2675
Barley	X_{12}	3021	4400	3450	950	5.8	4196
Oats, etc.	X_{13}	2764	2300	2844	-544	-3.8	2520
Imported beef	X_{14}	389	429	407	22	6.7	372
Imported mutton	X_{15}	343	404	368	36	7.2	366
Imported pigmeat	X_{16}	352	537	377	160	8.6	385
Imported vegetables	X_{17}	328	328	358	-30	-1.9	342
Imported fruit	X_{18}	1547	1903	1845	58	1.1	1869
Imported tomatoes	X_{19}	364	420	411	9	-0.7	425
Butter - total	X_{20}	2151	2212	2338	-126	-1.7	2324
Cheese - total	X_{21}	498	572	539	33	2.3	535

Table 26. Final Forecasts 1965. Assumption Aa, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	951	807	144	13.4	895
Home produced mutton	X_2	201	265	216	49	11.5	240
Home produced pigmeat	X_3	611	590	649	-59	0.3	628
Imported canned meat	X_4	192	210	201	9	2.4	202
Fish - imported	X_5	111	137	117	20	3.9	128
- home	X_6	396	355	408	-53	-6.1	379
Eggs - home and imported	X_7	1012	1180	1113	67	2.9	1120
Home produced vegetables	X_8	2032	2117	2211	-94	0.4	2220
Home produced fruit	X_9	768	878	889	-11	1.0	877
Home produced tomatoes	X_{10}	100	84	114	-30	-11.5	95
Wheat	X_{11}	2734	2671	2665	6	1.7	2844
Barley	X_{12}	3021	4631	3408	1223	7.4	4388
Oats, etc.	X_{13}	2764	2443	2844	-401	-2.2	2650
Imported beef	X_{14}	389	429	406	23	5.7	380
Imported mutton	X_{15}	343	404	369	35	6.6	370
Imported pigmeat	X_{16}	352	440	371	69	3.4	381
Imported vegetables	X_{17}	328	328	357	-29	-2.0	343
Imported fruit	X_{18}	1547	1903	1791	112	2.7	1818
Imported tomatoes	X_{19}	364	420	404	16	0.5	417
Butter - total	X_{20}	2151	2104	2308	-204	-3.8	2272
Cheese - total	X_{21}	498	518	536	-18	-2.6	531

Table 27. Final Forecasts 1965. Assumption Ab, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	951	812	139	12.7	897
Home produced mutton	X_2	201	265	218	47	10.8	241
Home produced pigmeat	X_3	611	590	657	-67	-0.4	634
Imported canned meat	X_4	192	210	202	8	2.1	203
Fish - imported	X_5	111	137	117	20	3.8	128
- home	X_6	396	355	412	-57	-6.7	382
Eggs - home and imported	X_7	1012	1179	1124	55	2.1	1129
Home produced vegetables	X_8	2032	2117	2224	-107	-0.4	2231
Home produced fruit	X_9	768	878	904	-26	-1.1	880
Home produced tomatoes	X_{10}	100	84	115	-31	-12.4	96
Wheat	X_{11}	2734	2669	2657	12	1.7	2834
Barley	X_{12}	3021	4629	3413	1216	7.3	4383
Oats, etc.	X_{13}	2764	2442	2844	-402	-2.3	2645
Imported beef	X_{14}	389	429	408	21	5.3	384
Imported mutton	X_{15}	343	404	373	31	6.0	373
Imported pigmeat	X_{16}	352	440	375	65	3.1	386
Imported vegetables	X_{17}	328	328	359	-31	-2.5	346
Imported fruit	X_{18}	1547	1903	1822	81	1.6	1852
Imported tomatoes	X_{19}	364	420	409	11	-0.4	423
Butter - total	X_{20}	2151	2095	2333	-238	-4.5	2289
Cheese - total	X_{21}	498	513	540	-27	-3.7	534

Table 28. Final Forecasts 1965. Assumption Ac, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	952	818	134	12.0	899
Home produced mutton	X_2	201	265	221	44	10.0	242
Home produced pigmeat	X_3	611	590	663	-73	-0.9	639
Imported canned meat	X_4	192	210	203	7	1.8	204
Fish - imported	X_5	111	137	119	18	3.2	129
- home	X_6	396	355	414	-59	-7.1	383
Eggs - home and imported	X_7	1012	1179	1135	44	1.4	1139
Home produced vegetables	X_8	2032	2117	2236	-119	-1.1	2241
Home produced fruit	X_9	768	878	919	-41	-3.1	883
Home produced tomatoes	X_{10}	100	84	117	-33	-13.7	98
Wheat	X_{11}	2734	2669	2649	20	1.7	2824
Barley	X_{12}	3021	4628	3450	1178	7.1	4385
Oats, etc.	X_{13}	2764	2441	2844	-403	-2.4	2639
Imported beef	X_{14}	389	429	411	18	4.8	387
Imported mutton	X_{15}	343	404	376	28	5.4	376
Imported pigmeat	X_{16}	352	440	378	62	2.8	390
Imported vegetables	X_{17}	328	328	361	-33	3.0	350
Imported fruit	X_{18}	1547	1903	1851	52	0.6	1884
Imported tomatoes	X_{19}	364	420	414	6	-1.3	429
Butter - total	X_{20}	2151	2084	2351	-267	-5.2	2300
Cheese - total	X_{21}	498	507	543	-36	-4.7	537

Table 29. Final Forecasts 1965. Assumption Ba, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	949	804	145	13.9	892
Home produced mutton	X_2	201	266	215	51	12.1	240
Home produced pigmeat	X_3	611	590	647	-57	0.5	626
Imported canned meat	X_4	192	210	200	10	2.5	201
Fish - imported	X_5	111	137	116	21	4.2	127
- home	X_6	396	355	406	-51	-5.8	378
Eggs - home and imported	X_7	1012	1180	1106	74	3.3	1114
Home produced vegetables	X_8	2032	2122	2196	-74	1.3	2209
Home produced fruit	X_9	768	878	886	-8	1.5	876
Home produced tomatoes	X_{10}	100	84	113	-29	-11.1	95
Wheat	X_{11}	2734	2673	2619	54	2.2	2843
Barley	X_{12}	3021	4633	3344	1289	8.0	4377
Oats, etc.	X_{13}	2764	2444	2844	-400	-2.2	2660
Imported beef	X_{14}	389	429	405	24	5.9	379
Imported mutton	X_{15}	343	404	368	36	6.9	368
Imported pigmeat	X_{16}	352	440	370	70	3.5	379
Imported vegetables	X_{17}	328	328	354	-26	-1.5	339
Imported fruit	X_{18}	1547	1903	1786	117	2.9	1811
Imported tomatoes	X_{19}	364	420	403	17	0.7	415
Butter - total	X_{20}	2151	2117	2297	-180	-3.2	2268
Cheese - total	X_{21}	498	524	533	-9	-1.7	528

Table 30. Final Forecasts 1965. Assumption Bb, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	950	809	141	13.2	894
Home produced mutton	X_2	201	265	218	47	11.1	241
Home produced pigmeat	X_3	611	590	654	-64	-0.1	632
Imported canned meat	X_4	192	210	201	9	2.3	202
Fish - imported	X_5	111	137	117	20	3.9	128
- home	X_6	396	355	409	-54	-6.3	380
Eggs - home and imported	X_7	1012	1180	1117	63	2.5	1123
Home produced vegetables	X_8	2032	2117	2208	-91	0.3	2218
Home produced fruit	X_9	768	878	902	-24	-0.7	879
Home produced tomatoes	X_{10}	100	84	115	-31	-12.3	96
Wheat	X_{11}	2734	2672	2616	56	2.1	2831
Barley	X_{12}	3021	4632	3408	1224	7.6	4386
Oats, etc.	X_{13}	2764	2443	2844	-401	-2.3	2652
Imported beef	X_{14}	389	429	407	22	5.5	382
Imported mutton	X_{15}	343	404	371	33	6.3	371
Imported pigmeat	X_{16}	352	440	374	66	3.2	384
Imported vegetables	X_{17}	328	328	356	-28	-2.1	343
Imported fruit	X_{18}	1547	1903	1816	87	1.8	1844
Imported tomatoes	X_{19}	364	420	407	13	-0.1	421
Butter - total	X_{20}	2151	2107	2318	-211	-3.9	2281
Cheese - total	X_{21}	498	519	536	-17	-2.6	531

Table 31. Final Forecasts 1965. Assumption Bc, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	951	814	137	12.6	897
Home produced mutton	X_2	201	265	219	46	10.6	241
Home produced pigmeat	X_3	611	590	661	-71	-0.6	638
Imported canned meat	X_4	192	210	202	8	2.1	203
Fish - imported	X_5	111	137	118	19	3.5	129
- home	X_6	396	355	412	-57	-6.8	382
Eggs - home and imported	X_7	1012	1180	1128	52	1.8	1133
Home produced vegetables	X_8	2032	2117	2220	-103	-0.4	2229
Home produced fruit	X_9	768	878	916	-38	-2.6	882
Home produced tomatoes	X_{10}	100	84	116	-32	-13.2	97
Wheat	X_{11}	2734	2671	2610	61	2.1	2821
Barley	X_{12}	3021	4631	3450	1181	7.3	4392
Oats, etc.	X_{13}	2764	2443	2844	-401	-2.3	2647
Imported beef	X_{14}	389	429	409	20	5.1	385
Imported mutton	X_{15}	343	404	375	29	5.7	374
Imported pigmeat	X_{16}	352	440	377	63	2.9	388
Imported vegetables	X_{17}	328	328	358	-30	-2.5	346
Imported fruit	X_{18}	1547	1903	1846	57	0.8	1876
Imported tomatoes	X_{19}	364	420	411	9	-0.8	426
Butter - total	X_{20}	2151	2096	2338	-242	-4.6	2294
Cheese - total	X_{21}	498	514	539	-25	-3.7	534

Table 32. Final Forecasts for 1975. Assumption Aa, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773 000 tons	979	833	146	16.0	932
Home produced mutton	X_2	201 000 tons	283	230	53	14.4	256
Home produced pigmeat	X_3	611 000 tons	798	676	122	10.7	694
Imported canned meat	X_4	192 000 tons	250	211	39	6.1	214
Fish - imported	X_5	111 000 tons	160	121	39	6.7	140
- home	X_6	396 000 tons	312	420	-108	-10.8	366
Eggs - home and imported	X_7	1012 m. doz.	1475	1212	263	14.4	1253
Home produced vegetables	X_8	2032 000 tons	2271	2397	-126	0.9	2400
Home produced fruit	X_9	768 000 tons	1032	1005	27	4.5	1018
Home produced tomatoes	X_{10}	100 000 tons	84	128	-44	-14.7	102
Wheat	X_{11}	2734 000 tons	3009	2559	450	5.4	3131
Barley	X_{12}	3021 000 tons	6230	3806	2424	13.1	5602
Oats, etc.	X_{13}	2764 000 tons	1841	2946	-1105	-7.4	2280
Imported beef	X_{14}	389 000 tons	445	420	25	6.5	380
Imported mutton	X_{15}	343 000 tons	460	392	68	9.7	397
Imported pigmeat	X_{16}	352 000 tons	585	383	202	9.1	385
Imported vegetables	X_{17}	328 000 tons	360	387	-27	-1.3	372
Imported fruit	X_{18}	1547 000 tons	2175	2024	151	3.6	2033
Imported tomatoes	X_{19}	364 000 tons	475	446	29	1.4	463
Butter - total	X_{20}	2151 in milk equivalent, m. galls.	2320	2448	-128	-1.0	2434
Cheese - total	X_{21}	498	611	575	36	2.8	572

Table 33. Final Forecasts 1975. Assumption Ab, low feed price

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	981	851	130	13.6	939
Home produced mutton	X_2	201	282	238	44	11.8	259
Home produced pigmeat	X_3	611	798	700	98	8.8	713
Imported canned meat	X_4	192	250	214	36	5.4	217
Fish - imported	X_5	111	160	126	34	5.4	144
- home	X_6	396	312	430	-118	-12.3	374
Eggs - home and imported	X_7	1012	1474	1251	223	12.1	1287
Home produced vegetables	X_8	2032	2266	2449	-183	-2.1	2441
Home produced fruit	X_9	768	1032	1067	-35	-2.3	1038
Home produced tomatoes	X_{10}	100	84	134	-50	-18.2	107
Wheat	X_{11}	2734	3005	2521	484	5.2	3079
Barley	X_{12}	3021	6227	4039	2188	11.7	5643
Oats, etc.	X_{13}	2764	1841	2946	-1105	-7.7	2255
Imported beef	X_{14}	389	445	428	17	5.3	393
Imported mutton	X_{15}	343	460	405	55	7.9	409
Imported pigmeat	X_{16}	352	585	396	189	8.3	402
Imported vegetables	X_{17}	328	360	395	-35	-3.0	387
Imported fruit	X_{18}	1547	2175	2149	26	0.2	2167
Imported tomatoes	X_{19}	364	475	465	10	-1.3	486
Butter - total	X_{20}	2151	2300	2524	-224	-2.8	2491
Cheese - total	X_{21}	498	601	587	14	0.4	583

Table 34. Final Forecasts, 1975. Assumption Ac, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	982	869	113	11.2	944
Home produced mutton	X_2	201	282	246	36	9.3	264
Home produced pigmeat	X_3	611	797	727	70	6.8	734
Imported canned meat	X_4	192	250	218	32	4.6	222
Fish - imported	X_5	111	160	130	30	4.3	147
- home	X_6	396	312	440	-128	-13.8	381
Eggs - home and imported	X_7	1012	1474	1294	180	9.5	1324
Home produced vegetables	X_8	2032	2266	2505	-239	-5.2	2488
Home produced fruit	X_9	768	1032	1135	-103	-9.7	1060
Home produced tomatoes	X_{10}	100	84	142	-58	-22.6	112
Wheat	X_{11}	2734	3002	2485	517	5.2	3040
Barley	X_{12}	3021	6224	4132	2092	11.1	5645
Oats, etc.	X_{13}	2764	1841	2946	-1105	-7.9	2237
Imported beef	X_{14}	389	445	437	8	4.0	406
Imported mutton	X_{15}	343	460	420	40	5.9	422
Imported pigmeat	X_{16}	352	585	409	176	7.5	419
Imported vegetables	X_{17}	328	360	404	-44	-4.7	403
Imported fruit	X_{18}	1547	2175	2286	-111	-3.5	2315
Imported tomatoes	X_{19}	364	475	485	-10	-4.2	512
Butter - total	X_{20}	2151	2280	2604	-324	-4.6	2551
Cheese - total	X_{21}	498	591	600	-9	-2.0	596

Table 35. Final Forecasts 1975. Assumption Ba, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	977	818	159	18.2	925
Home produced mutton	X_2	201	284	226	58	16.4	254
Home produced pigmeat	X_3	611	804	665	139	12.1	686
Imported canned meat	X_4	192	250	206	44	7.0	209
Fish - imported	X_5	111	160	119	41	7.5	137
- home	X_6	396	312	412	-100	-10.0	362
Eggs - home and imported	X_7	1012	1477	1186	291	16.2	1229
Home produced vegetables	X_8	2032	2292	2350	-58	3.8	2370
Home produced fruit	X_9	768	1032	994	38	6.2	1014
Home produced tomatoes	X_{10}	100	84	126	-42	-13.9	101
Wheat	X_{11}	2734	3015	2433	582	6.8	3121
Barley	X_{12}	3021	6241	3758	2483	14.2	5607
Oats, etc.	X_{13}	2764	1846	2946	-1100	-7.4	2315
Imported beef	X_{14}	389	445	412	33	7.5	369
Imported mutton	X_{15}	343	460	386	74	10.8	390
Imported pigmeat	X_{16}	352	585	378	207	9.5	376
Imported vegetables	X_{17}	328	360	379	-19	0.1	359
Imported fruit	X_{18}	1547	2175	2002	173	4.3	2004
Imported tomatoes	X_{19}	364	475	439	36	2.3	455
Butter - total	X_{20}	2151	2346	2396	-50	0.4	2399
Cheese - total	X_{21}	498	624	562	62	5.2	560

Table 36. Final Forecasts 1975. Assumption Bb, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	979	834	145	16.0	931
Home produced mutton	X_2	201	283	234	49	13.8	258
Home produced pigmeat	X_3	611	798	690	108	10.0	705
Imported canned meat	X_4	192	250	210	40	6.2	213
Fish - imported	X_5	111	160	124	36	6.2	141
- home	X_6	396	312	421	-109	-11.4	369
Eggs - home and imported	X_7	1012	1476	1224	252	13.7	1262
Home produced vegetables	X_8	2032	2292	2399	-107	1.0	2410
Home produced fruit	X_9	768	1032	1053	-21	-0.4	1034
Home produced tomatoes	X_{10}	100	84	132	-48	-17.4	106
Wheat	X_{11}	2734	3014	2397	617	6.7	3076
Barley	X_{12}	3021	6238	3958	2280	12.9	5643
Oats, etc.	X_{13}	2764	1843	2946	-1103	-7.6	2290
Imported beef	X_{14}	389	445	420	25	6.3	381
Imported mutton	X_{15}	343	460	398	62	9.1	401
Imported pigmeat	X_{16}	352	585	389	196	8.7	392
Imported vegetables	X_{17}	328	360	387	-27	-1.4	373
Imported fruit	X_{18}	1547	2175	2121	54	1.1	2133
Imported tomatoes	X_{19}	364	475	457	18	-0.2	477
Butter - total	X_{20}	2151	2329	2467	-138	-1.2	2453
Cheese - total	X_{21}	498	616	573	43	2.4	570

Table 37. Final Forecasts 1975. Assumption Bc, low feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	980	852	128	13.5	937
Home produced mutton	X_2	201	283	242	41	11.2	262
Home produced pigmeat	X_3	611	798	716	82	8.0	726
Imported canned meat	X_4	192	250	213	37	5.4	217
Fish - imported	X_5	111	160	127	33	5.3	144
- home	X_6	396	312	433	-121	-13.1	377
Eggs - home and imported	X_7	1012	1475	1265	210	11.2	1297
Home produced vegetables	X_8	2032	2292	2456	-164	-2.2	2458
Home produced fruit	X_9	768	1032	1121	-89	-8.0	1057
Home produced tomatoes	X_{10}	100	84	140	-56	-21.8	111
Wheat	X_{11}	2734	3010	2359	651	6.5	3024
Barley	X_{12}	3021	6235	4184	2051	11.5	5683
Oats, etc.	X_{13}	2764	1843	2946	-1103	-7.9	2265
Imported beef	X_{14}	389	445	429	16	5.0	395
Imported mutton	X_{15}	343	460	413	47	7.0	414
Imported pigmeat	X_{16}	352	585	403	182	7.9	410
Imported vegetables	X_{17}	328	360	396	-36	-3.2	389
Imported fruit	X_{18}	1547	2175	2259	-84	-2.7	2282
Imported tomatoes	X_{19}	364	475	477	-2	-3.1	502
Butter - total	X_{20}	2151	2309	2546	-237	-3.0	2514
Cheese - total	X_{21}	498	606	586	-20	0.6	583

Table 38. Final Forecasts 1975. Assumption Aa, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	959	837	122	12.5	918
Home produced mutton	X_2	201	295	234	61	13.3	261
Home produced pigmeat	X_3	611	639	676	-37	2.2	663
Imported canned meat	X_4	192	250	213	37	5.3	218
Fish - imported	X_5	111	160	125	35	5.5	144
- home	X_6	396	312	432	-120	-12.7	375
Eggs - home and imported	X_7	1012	1374	1214	160	6.4	1232
Home produced vegetables	X_8	2032	2255	2400	-145	-0.2	2398
Home produced fruit	X_9	768	1032	1005	27	4.0	1019
Home produced tomatoes	X_{10}	100	84	128	-44	-14.8	102
Wheat	X_{11}	2734	3202	2559	643	6.9	3298
Barley	X_{12}	3021	6495	3806	2689	14.8	5828
Oats, etc.	X_{13}	2764	2011	2946	-935	-5.7	2430
Imported beef	X_{14}	389	445	422	23	5.2	394
Imported mutton	X_{15}	343	460	398	62	8.5	405
Imported pigmeat	X_{16}	352	480	383	97	4.1	390
Imported vegetables	X_{17}	328	360	388	-28	-1.8	376
Imported fruit	X_{18}	1547	2175	2026	149	3.4	2040
Imported tomatoes	X_{19}	364	475	446	29	1.3	463
Butter - total	X_{20}	2151	2223	2448	-225	-3.1	2412
Cheese - total	X_{21}	498	562	575	-13	-1.5	571

Table 39. Final Forecasts 1975. Assumption Ab, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	960	855	105	10.1	923
Home produced mutton	X_2	201	295	241	54	11.0	267
Home produced pigmeat	X_3	611	639	700	-61	0.3	682
Imported canned meat	X_4	192	250	216	34	4.6	221
Fish - imported	X_5	111	160	130	30	4.1	148
- home	X_6	396	312	442	-130	-14.2	383
Eggs - home and imported	X_7	1012	1373	1253	120	4.1	1266
Home produced vegetables	X_8	2032	2250	2452	-202	-3.2	2440
Home produced fruit	X_9	768	1032	1067	-35	-2.8	1039
Home produced tomatoes	X_{10}	100	84	134	-50	-18.3	107
Wheat	X_{11}	2734	3198	2521	677	6.8	3247
Barley	X_{12}	3021	6492	4039	2453	13.4	5869
Oats, etc.	X_{13}	2764	1999	2946	-947	-6.1	2396
Imported beef	X_{14}	389	445	430	15	3.9	407
Imported mutton	X_{15}	343	460	412	48	6.6	417
Imported pigmeat	X_{16}	352	480	396	84	3.3	407
Imported vegetables	X_{17}	328	360	396	-36	-3.5	391
Imported fruit	X_{18}	1547	2175	2151	24	0.0	2175
Imported tomatoes	X_{19}	364	475	465	10	-1.4	487
Butter - total	X_{20}	2151	2203	2524	-321	-4.8	2469
Cheese - total	X_{21}	498	552	587	-35	-3.8	582

Table 40. Final Forecasts 1975. Assumption Ac, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	961	873	88	7.6	929
Home produced mutton	X_2	201	294	250	44	8.2	271
Home produced pigmeat	X_3	611	638	727	-89	-1.7	703
Imported canned meat	X_4	192	250	220	30	3.8	226
Fish - imported	X_5	111	160	133	27	3.2	150
- home	X_6	396	312	453	-141	-15.8	391
Eggs - home and imported	X_7	1012	1372	1296	76	1.5	1302
Home produced vegetables	X_8	2032	2250	2508	-258	-6.3	2486
Home produced fruit	X_9	768	1032	1135	-103	-10.2	1061
Home produced tomatoes	X_{10}	100	84	142	-58	-22.7	112
Wheat	X_{11}	2734	3195	2485	710	6.8	3206
Barley	X_{12}	3021	6487	4132	2355	12.7	5868
Oats, etc.	X_{13}	2764	1997	2946	-949	-6.3	2376
Imported beef	X_{14}	389	445	439	6	2.6	421
Imported mutton	X_{15}	343	460	426	34	4.7	430
Imported pigmeat	X_{16}	352	480	409	71	2.5	425
Imported vegetables	X_{17}	328	360	405	-45	-5.2	407
Imported fruit	X_{18}	1547	2175	2288	-113	-3.7	2322
Imported tomatoes	X_{19}	364	475	485	-10	-4.3	513
Butter - total	X_{20}	2151	2183	2604	-421	-6.6	2529
Cheese - total	X_{21}	498	542	600	-58	-6.3	595

Table 41. Final Forecasts 1975. Assumption Ba, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at constant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home produced beef	X_1	773	956	822	134	14.6	910
Home produced mutton	X_2	201	296	230	66	15.3	262
Home produced pigmeat	X_3	611	639	665	-26	3.2	655
Imported canned meat	X_4	192	250	208	42	6.2	213
Fish - imported	X_5	111	160	123	37	6.2	141
- home	X_6	396	312	424	-112	-11.9	371
Eggs - home and imported	X_7	1012	1375	1188	187	8.0	1209
Home produced vegetables	X_8	2032	2282	2353	-71	2.9	2370
Home produced fruit	X_9	768	1032	994	38	5.7	1015
Home produced tomatoes	X_{10}	100	84	127	-43	-14.3	102
Wheat	X_{11}	2734	3210	2433	777	8.4	3288
Barley	X_{12}	3021	6506	3758	2748	15.9	5830
Oats, etc.	X_{13}	2764	2006	2946	-940	-5.7	2456
Imported beef	X_{14}	389	445	414	31	6.2	383
Imported mutton	X_{15}	343	460	392	68	9.6	398
Imported pigmeat	X_{16}	352	480	378	102	4.4	382
Imported vegetables	X_{17}	328	360	380	-20	-0.3	363
Imported fruit	X_{18}	1547	2175	2004	171	4.1	2011
Imported tomatoes	X_{19}	364	475	439	36	2.3	455
Butter - total	X_{20}	2151	2248	2396	-148	-1.7	2378
Cheese - total	X_{21}	498	575	562	13	0.9	559

Table 42. Final Forscasts 1975. Assumption Bb, high fsed prices

		1 Average suppliee moving into consumption 1955-9	2 Supplies at constant prices	3 Demand at conetant prices	4 Discrepancy 2 - 3 (surplus)	5 Forecasts of price fall %	6 Reconciled demand and supply
Home producsd besf	X_1	773	958	838	120	12.4	916
Home produced mutton	X_2	201	296	237	59	13.0	265
Home produced pigmeat	X_3	611	639	690	-51	1.4	674
Imported canned meat	X_4	192	250	212	38	5.4	217
Fish - imported	X_5	111	160	128	32	4.9	145
- home	X_6	396	312	433	-121	-13.2	378
Eggs - home and imported	X_7	1012	1374	1226	148	5.6	1241
Home produced vegetablee	X_8	2032	2277	2402	-125	-0.0	2410
Home produced fruit	X_9	768	1032	1053	-21	-0.9	1035
Home produced tomatoes	X_{10}	100	84	132	-48	-17.4	106
Wheat	X_{11}	2734	3211	2392	819	8.4	3244
Barley	X_{12}	3021	6502	3958	2544	14.7	5867
Oate, etc.	X_{13}	2764	2005	2946	-941	-6.0	2434
Imported beef	X_{14}	389	445	422	23	5.0	395
Imported mutton	X_{15}	343	460	405	55	7.8	409
Imported pigmsat	X_{16}	352	480	389	91	3.8	397
Imported vegetables	X_{17}	328	360	388	-28	-1.9	377
Imported fruit	X_{18}	1547	2175	2123	52	0.9	2140
Importsd tomatoes	X_{19}	364	475	457	18	-0.3	477
Butter - total	X_{20}	2151	2231	2467	-236	-3.3	2432
Cheese - total	X_{21}	498	566	573	-7	-1.3	570

Table 43. Final Forecasts 1975. Aseumption Bc, high feed prices

		1 Average supplies moving into consumption 1955-9	2 Supplies at conetant pricee	3 Demand at conetant prices	4 Discrepancy 2 - 3 (eurplus)	5 Forecaste of price fall %	6 Reconciled demand and eupply
Home produced besf	X_1	773	959	856	103	9.8	921
Home produced mutton	X_2	201	295	246	49	10.1	270
Homs produced pigmeat	X_3	611	639	716	-77	-0.6	695
Imported canned meat	X_4	192	250	215	35	4.6	221
Fish - imported	X_5	111	160	131	29	4.0	148
- home	X_6	396	312	445	-133	-15.0	387
Eggs - home and imported	X_7	1012	1374	1267	107	3.1	1277
Home produced vegetables	X_8	2032	2277	2459	-182	-3.3	2457
Homs produced fruit	X_9	768	1032	1121	-89	-8.5	1058
Home produced tomatoee	X_{10}	100	84	140	-56	-21.9	111
Wheat	X_{11}	2734	3203	2359	844	8.2	3189
Barley	X_{12}	3021	6499	4184	2315	13.2	5905
Oate, etc.	X_{13}	2764	2003	2946	-943	-6.3	2406
Imported beef	X_{14}	389	445	431	14	3.7	409
Imported mutton	X_{15}	343	460	419	41	5.8	422
Imported pigmeat	X_{16}	352	480	403	77	2.9	415
Imported vegetables	X_{17}	328	360	397	-37	-3.7	393
Imported fruit	X_{18}	1547	2175	2260	-85	2.8	2288
Imported tomatoee	X_{19}	364	475	477	-2	-3.2	503
Butter - total	X_{20}	2151	2211	2546	-335	-5.1	2492
Cheess - total	X_{21}	498	556	586	-30	-3.8	582

Table 44a. Forecast structure of livestock population and acreage of crops, under low income and high population assumptions

		Observed 1955-9 June and Dec. av. 000	Forecast for 1965		Forecast for 1975		Assumptions concerning grazing units and efficiency of conversion of concentrated feed
			Low feed price Aa	High feed price Aa	Low feed price Aa	High feed price Aa	Grazing units per 000 livestock
Cows		3892	4289	4147	4393	4242	1059 } + 558 x sales of milk in mill.galls. for grazing units for milk
Heifers in calf		729	709	686	727	702	1059 }
Calves under 1 yr		2472	2831	2781	2913	2863	210 }
Cattle 1-2 yr		2269	2605	2559	2680	2634	652 } + 2800 x formation of beef within U.K. in 000 tons for grazing units for beef
Cattle over 2 yrs		1460	1545	1536	1663	1652	750 }
Bulls in service		84	65	65	50	50	800 }
Total cattle		10906	12044	11774	12426	12143	
Store inputs (gross)		545	300	300	400	400	
Grazing units for beef		5090	5814	5725	6054	5966	
Grazing units for milk		6063	6706	6452	6999	6726	
Ewes for breeding		9767	10485	10800	11034	11249	210 } grazing units for mutton and wool production
Shearlings		2242	2307	2376	2427	2475	210 }
Lambs (June only)		11200	12509	12884	13793	14061	140 }
Rams		296	318	327	334	341	210 }
Other sheep		1181	900	900	820	820	210 }
Grazing units for mutton and wool		4400	4694	4829	5000	5095	
Horses		241	140	140	100	100	700
Grazing units		169	98	98	70	70	
Total grazing units		15722	17312	17104	18123	17857	
Sows for breeding		728	799	765	824	788	
Other pigs		5414	5945	5937	6287	6012	
Fowls over 6 months (incl. backyard hens, etc.)		66408	67788	66220	66508	65012	
Concentrated feed required (000 tons)	S	11934	13651	13061	14308	13716	
	P	2096	2449	2349	2574	2460	
For milk	S	2341	2706	2543	2862	2703	
	P	899	1053	1005	1113	1051	
For beef	S	1280	1546	1520	1612	1586	
	P	320	387	380	403	396	
For sheep and horses	S	417	321	321	308	308	
	P	-	-	-	-	-	
For pigmeat	S	3673	3929	3762	4052	3871	
	P	408	437	418	450	430	
For eggs	S	3503	3904	3813	4094	4002	
	P	389	434	424	455	445	
For poultrymeat	S	720	1245	1102	1380	1246	
	P	80	138	122	153	138	
Available supply of home produced concentrated feed		6652	7572	8023	9148	9671	

Assumed efficiency improvements in conversion of concentrates to livestock products		
	1957 - 1965	1965 - 1975
For milk	½% p.a.	½% p.a.
For beef	nil	nil
For sheep and horses	some increase in concentrates for sheep	
For pigmeat	¼% p.a.	¼% p.a.
For eggs	¾% p.a.	½% p.a.
For poultrymeat	1.56% p.a.	.78% p.a.
Available supply of home produced concentrated feed	Almost entirely low protein feed (incl. some wastage)	

Notes: S = low protein feeds
P = high protein feeds

Table 44 b. Forecast of cropping pattern and availability of forage

	1955-9 observed acreage in June	Forecasts for 1965		Forecasts for 1975		Corresponding units for grazing or coarse forage per 000 acres
		Low feed prices Aa	High feed prices Aa	Low feed prices Aa	High feed prices Aa	
Wheat	2158	1867	1969	1916	2018	
Barley	2520	3067	3209	3621	3767	
Oats and other grains	2803	2317	2434	1881	2005	160
All grain	7481	7251	7612	7418	7790	
Pulses for fodder	114	80	88	60	68	
Rape	148	97	100	82	84	1500*
Kale	350	468	450	563	547	1500
Turnips, etc.	543	386	386	236	236	1540
Mangolds	167	123	123	93	93	1930
Vetches	35	20	20	10	10	930
Fodder crops	1357	1174	1167	1044	1038	
Potatoes	865	805	805	746	746	
Sugar beet	432	432	432	432	432	380
Pulses for food	94	37	37	37	37	
Tomatoes	3	3	3	3	3	
Other vegetables	382	418	417	451	451	
Hops	20	22	22	24	24	
Mustard	34	32	32	30	30	
Linseed and other crops	53	43	43	43	43	
Fruit	305	305	305	305	305	
Flowers and nursery stock	28	36	36	46	46	
Fallow	298	258	258	236	236	
Crops and fallow	11352	10816	11169	10792	11158	
Temporary grass	6327	6995	6858	7571	7449	870
Permanent grass	13383	12868	12652	11918	11796	600
Rough grazing	16853	16853	16853	16772	16650	150
Agricultural land	47915	47532	47532	47053	47053	
Available grazing units (at fixed yields)	18613	18567	18315	18238	18039	
Required grazing units	15722	17312	17104	18123	17857	
Utilization or yield of grass and forage required	100	110.3	110.6	117.6	117.2	
Expected yield	100	110	110	120	120	
Additional displacement of concentrated feed by grass, etc.**		nil	nil	300 100	300) cereals 100) high protein	

* Assumed undersown with grass for immediate grazing.

** To be deducted from requirements for milk and beef.

TABLE 45. Productivity and income changes.

		Forecasts for 1965												Forecasts for 1975												
		At low feed prices						At high feed prices						At low feed prices						At high feed prices						
		A			B			A			B			A			B			A			B			
		a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	Value in 1955-9
Crops & livestock products considered including grain retained on farms	P	89	89	90	88	89	90	94	95	95	94	94	94	85	86	87	83	85	86	89	91	91	88	90	91	
	Q	117	117	118	117	117	118	114	115	115	114	114	115	128	129	132	128	129	131	126	128	130	125	127	129	
	V	103	104	105	103	104	104	107	108	109	107	108	108	107	110	114	105	108	112	111	115	119	109	112	116	£1485
Increased production less increased inputs at 1955-9 prices in £ millions		197	205	211	196	202	206	175	184	187	172	179	182	385	392	411	377	390	411	362	383	397	360	374	386	
Increased receipts less increased costs £ millions at current prices		22	25	25	17	26	20	12	21	21	3	13	11	87	96	109	49	66	76	77	95	113	50	63	69	
Total labour force in agriculture 1955-9=100		88	88	88	88	88	88	87	87	87	87	87	87	73	73	73	73	73	73	70	70	70	70	70	70	
Quantity index of production less inputs of feed and livestock imports		118	119	121	118	119	119	117	117	118	116	117	117	134	135	137	133	135	136	132	134	136	132	134	135	£1010
Productivity of labour net of inputs of feed and livestock		134	135	137	134	135	135	134	134	136	133	134	134	184	185	188	182	185	186	188	191	194	188	191	193	
Productivity of all inputs including feed and imports of livestock		112	112	113	112	112	112	111	111	111	111	111	111	124	125	125	124	125	126	124	125	125	124	124	125	
Productivity of labour in agriculture relative to productivity of labour in general		120	115	110	120	115	109	120	114	110	120	115	108	147	129	115	145	130	114	150	134	118	150	134	118	
Deficiency payments in £ million		136	137	138	136	137	138	147	148	149	147	148	149	106	109	112	105	108	111	111	114	117	110	113	116	£161
Production grants in £ million		92	92	92	92	92	92	82	82	82	82	82	82	77	77	77	77	77	77	77	77	77	77	77	77	£ 77
Estimate of net farm incomes based on 1955-9		110	111	111	109	111	110	105	107	107	102	105	104	122	125	128	113	117	120	120	125	129	113	116	118	£331
Income per farmer		115	116	116	114	116	115	114	116	116	111	114	113	134	137	141	124	129	132	146	152	157	138	141	144	

TABLE 46. Expected prices, production and gross receipts for United Kingdom agricultural products. Livestock products. Indices for 1965 and 1975 based on 1955-9 = 100.

		Forecasts for 1965												Forecasts for 1975												Value of production or sales in 1955-9 £ millions
		At low feed prices						At high feed prices						At low feed prices						At high feed prices						
		A			B			A			B			A			B			A			B			
		a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	
Milk (pool price)	P	92	92	92	91	92	92	95	96	96	95	95	95	89	89	90	87	88	89	91	92	93	90	91	92	
Sales through M.M.B.	Q	121	121	121	121	121	121	114	114	114	114	114	114	135	135	135	134	134	134	127	127	128	127	127	127	
Value of total output	V	111	111	111	110	111	111	108	109	109	108	108	108	120	120	121	117	118	119	116	117	119	114	116	117	340
Fat cows and veal	P	83	84	84	82	83	84	87	87	88	86	87	87	84	86	89	82	84	87	88	90	92	85	88	90	(40)
	Q	96	96	96	96	96	96	93	93	93	93	93	93	98	98	98	98	98	98	95	95	95	95	95	95	
Other cattle (Including imported cattle)	P	91	91	92	90	91	91	94	95	96	94	95	95	85	87	90	83	85	87	88	91	93	86	88	91	(158)
	Q	125	125	126	125	125	125	124	124	125	123	124	124	128	130	131	127	129	130	127	128	129	126	127	128	
All cattle	V	107	107	109	106	107	107	109	111	112	109	111	111	104	107	112	100	104	107	106	110	113	103	106	110	198
Fat sheep and lambs	P	87	88	89	87	88	88	89	89	90	88	89	89	83	85	88	81	83	86	84	86	88	82	84	87	(56)
(Excluding skin wool)	Q	117	117	118	117	117	118	121	121	121	121	121	121	129	131	133	128	130	132	132	135	137	132	134	136	
Fat sows	P	85	86	87	85	86	86	87	87	88	86	87	87	82	84	86	80	82	85	83	85	88	81	83	86	(4)
	Q	110	110	111	110	110	111	113	113	114	113	113	114	116	117	119	115	116	117	116	119	121	118	119	121	
Wool	P	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	(22)
(Including skin wool)	Q	108	108	109	108	108	109	111	112	112	111	112	112	115	116	118	114	116	117	117	119	121	117	119	121	
Mutton, lamb and wool	V	104	105	106	104	105	105	109	109	110	108	109	109	109	112	117	107	110	115	113	117	121	110	115	119	82
Bacon and pork pigs	P	87	87	88	86	87	87	95	96	96	95	96	96	32	84	86	80	83	85	90	92	94	89	91	93	(160)
	Q	107	108	109	107	108	109	102	103	104	102	103	104	113	116	120	112	115	118	108	111	115	107	110	112	
Fat sows	P	91	92	92	91	92	92	100	100	101	100	100	101	89	91	93	88	90	92	98	100	102	97	99	101	(9)
	Q	107	108	109	107	108	109	102	103	104	102	103	104	110	113	117	109	112	115	105	108	112	104	107	109	
All pigmeat	V	93	94	96	92	94	95	97	99	100	98	100	101	94	98	104	91	96	101	98	103	109	96	101	105	169
Eggs (Including backyard produce)	P	80	81	81	79	80	81	88	89	89	88	88	89	72	75	77	70	73	76	80	83	85	79	81	84	
	Q	119	119	120	118	119	120	115	117	118	115	116	117	131	134	138	129	132	135	128	132	135	126	129	133	
	V	95	96	97	93	95	97	101	104	105	101	102	104	94	101	106	90	96	103	102	110	115	100	104	112	193
Poultry	P	75	75	75	75	75	75	85	85	85	85	85	85	70	70	70	70	70	70	80	80	80	80	80	80	
	Q	198	203	208	199	204	209	175	180	185	176	181	186	245	263	283	245	262	282	221	239	259	221	239	258	
	V	149	152	156	149	153	157	149	153	157	150	154	158	172	184	198	172	183	197	177	191	207	177	191	200	50
Livestock products	P	88	88	88	87	88	88	93	93	94	93	93	93	83	84	86	81	83	85	88	89	90	86	89	90	
	Q	121	122	123	121	122	122	116	117	118	116	117	117	133	135	138	132	133	136	127	130	133	127	129	131	
	V	106	106	107	105	106	107	107	109	110	107	108	109	110	113	117	106	110	114	111	116	120	109	113	117	1032

TABLE 47. Expected level of prices, production and gross value for United Kingdom agricultural crops.

		Forecaete for 1965												Forecasts for 1975												Value of production or sales in 1955-9 £millions
		With low feed prices						With high feed prices						With low feed prices						With high feed prices						
		A			B			A			B			A			B			A			B			
		a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	
Wheat	P	79	79	79	79	79	79	88	88	88	88	88	88	71	71	71	70	70	70	80	80	80	79	79	79	(76)
(All production)	Q	99	98	98	99	98	98	104	104	103	104	104	103	115	113	111	114	113	111	121	119	117	120	119	117	
Barley	P	82	82	82	81	82	82	91	91	91	90	90	91	71	73	73	70	72	73	80	82	82	79	80	82	(79)
(All production)	Q	139	138	139	138	139	139	145	145	145	144	145	145	185	187	187	186	187	188	193	194	194	193	194	195	
Oats & Other Grain	P	99	99	99	99	99	99	108	108	108	108	108	108	96	96	96	96	96	96	105	105	105	105	105	105	(67)
(All production)	Q	91	91	91	92	91	91	96	96	95	96	96	96	82	82	81	84	83	82	88	87	86	89	88	87	
All Grain	V	95	94	94	95	94	94	110	110	109	109	110	110	99	100	100	98	99	100	116	116	117	115	115	116	222
Pulses for fodder	P	90	90	90	90	90	90	105	105	105	105	105	105	90	90	90	90	90	90	105	105	105	105	105	105	
	Q	70	70	70	70	70	70	77	77	77	77	77	77	53	53	53	53	53	53	60	60	60	60	60	60	
	V	63	63	63	63	63	63	81	81	81	81	81	81	48	48	48	48	48	48	63	63	63	63	63	63	3
Sugar Beet	P	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	
	Q	105	106	106	106	106	106	106	106	106	106	106	106	114	114	114	114	114	114	114	114	114	114	114	114	
	V	95	95	95	95	95	95	95	95	95	95	95	95	103	103	103	103	103	103	103	103	103	103	103	103	29
Potatoes	P	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	(76)
Disposals for food	Q	97	97	97	96	96	96	97	97	97	96	96	96	91	91	90	88	88	88	91	91	90	88	88	88	
Tomatoes	P	111	112	114	111	112	113	111	112	114	111	112	113	115	118	123	114	117	122	115	118	123	114	117	122	(16)
	Q	95	96	98	95	96	97	95	96	98	95	96	97	102	107	112	101	106	111	102	107	112	102	106	111	
Dried pulses for food	P	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	92	(3)
	Q	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	
Other Vegetables	P	98	99	100	98	98	99	100	100	101	99	100	100	99	102	105	96	99	102	100	103	106	97	100	103	(56)
	Q	109	110	110	109	109	110	109	110	110	109	109	110	118	120	122	117	119	121	118	120	122	117	119	121	
All Vegetables	V	100	101	102	100	101	101	101	102	103	100	101	102	102	105	108	99	102	104	103	106	109	99	102	105	151
All Fruit	P	98	101	102	98	100	102	99	101	103	99	101	103	96	102	110	94	100	108	96	103	110	94	101	108	
	Q	114	114	115	114	114	115	114	114	114	114	114	115	133	135	138	132	135	138	133	135	138	132	135	138	
	V	112	115	117	112	114	117	113	115	117	113	115	118	127	138	152	124	135	149	128	139	152	124	136	149	41
Hops	P	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
	Q, V	110	110	111	110	111	112	110	110	111	110	111	112	119	122	125	120	123	126	119	122	125	120	123	126	7
Total of above crops	P	92	92	93	92	92	93	97	97	98	97	97	97	89	90	91	88	89	91	93	95	96	92	94	94	
	Q	107	107	107	107	107	107	109	109	109	109	109	109	119	119	120	118	119	119	122	122	122	121	122	122	
	V	98	98	99	98	98	99	106	106	106	105	106	107	102	105	107	101	103	106	111	113	116	109	111	114	453

P refers to the level of prices weighted by values in base period.
Q refers to the level of supplies valued at base period prices.
V refers to current level of value of production or output.

TABLE 48. Expected price levels and use of some inputs of United Kingdom agriculture.

		Forecasts for 1965												Forecasts for 1975												Cost in 1955-59 £ millions
		At low feed prices						At high feed prices						At low feed prices						At high feed prices						
		A			B			A			B			A			B			A			B			
		a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	
Feedingstuffs	P	86	86	86	86	86	86	101	101	101	101	101	101	86	86	86	86	86	86	101	101	101	101	101	101	
(Concentrates used	Q	115	115	116	115	115	116	110	111	111	110	110	111	118	120	123	117	119	121	113	115	118	111	114	117	
including non-farm &	V	99	99	100	99	99	100	111	112	112	111	111	112	101	103	105	100	102	104	114	116	117	112	115	118	£443
farmer's use of own grain)																										
Fertilisers	P	85	85	85	85	85	85	85	85	85	85	85	85	80	80	80	80	80	80	80	80	80	80	80	80	
	Q	127	127	127	127	127	127	128	128	128	128	128	128	154	154	154	154	154	154	156	156	156	156	156	156	
(Including subsidy)	V	108	108	108	108	108	108	109	109	109	109	109	109	123	123	123	123	123	123	125	125	125	125	125	125	£86
Machinery, fuel,	P	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
and contract services	(Q	105	105	105	105	105	105	107	107	107	107	107	107	110	110	110	110	110	110	112	112	112	112	112	112	£205
	(V																									
Labour	P	115	118	121	116	119	122	115	118	121	116	119	122	130	144	159	134	146	162	130	144	159	134	147	162	
(Hired labour only)	Q	84	84	84	84	84	84	84	84	84	84	84	84	64	64	64	64	64	64	64	64	64	64	64	64	
	V	97	99	102	98	100	102	97	99	102	98	100	103	83	92	102	86	93	104	83	92	102	86	93	104	£299
/Estimated no. of farmers/		96	96	96	96	96	96	92	92	92	92	92	92	91	91	91	91	91	91	82	82	82	82	82	82	
Rent	Q	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
(Including some	(P																									
interest charges)	(V	130	130	130	130	130	130	135	135	135	135	135	135	140	142	144	135	137	139	145	147	149	140	142	144	£85
Store & fat cattle	P	91	91	92	90	91	92	95	96	96	95	95	95	85	87	90	83	85	87	88	91	93	86	88	91	
Net trade at port	Q	97	97	97	97	97	97	97	97	97	97	97	97	91	91	91	91	91	91	91	91	91	91	91	91	
	V	88	88	88	88	88	88	92	92	92	92	92	92	77	79	82	75	77	79	80	83	85	78	80	82	£32
Total of above costs	P	99	100	101	100	100	101	106	106	107	106	107	107	104	107	112	104	108	112	110	114	117	111	114	118	
	Q	104	104	105	104	104	105	103	103	103	103	103	103	103	104	105	103	104	104	102	102	103	101	102	103	
	V	102	103	104	102	102	104	108	109	109	108	109	110	102	105	109	102	105	108	108	111	114	107	111	115	£1150

TABLE 49(A). Forecaets of volume of importe of agricultural producte.

Volume of imports £m.	Value in 1955-9	Forecasts for 1965												Forecasts for 1975											
		Low Feed Prices						High Feed Prices						Low Feed Prices						High Feed Prices					
		A			B			A			B			A			B			A			B		
		a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Meat, cattle, fish, eggs	361	386	390	394	384	388	393	394	398	402	392	396	400	406	421	434	400	412	426	417	427	444	409	421	435
Milk products	147	132	135	136	131	133	135	143	145	147	141	144	146	131	138	145	125	132	138	141	147	155	133	141	148
Fruit	124	148	151	154	148	150	153	149	152	155	150	151	153	166	177	190	164	174	187	167	178	191	165	176	188
Vegetables	66	71	72	72	71	72	72	72	72	73	70	72	72	74	77	81	72	75	79	74	77	81	72	75	79
Grain etc. (gross imports)	220	236	239	240	234	236	239	212	215	217	210	213	215	202	209	218	195	202	210	177	183	191	169	176	184
Total of above items	918	973	987	996	968	979	992	970	982	994	963	976	986	979	1022	1068	956	995	1030	976	1012	1062	948	989	1034
Sugar, beverages, tobacco	348	378	380	383	375	378	380	379	381	384	376	379	381	409	421	433	402	412	430	410	422	434	403	413	430
Oile, fats, oilseed & oilcake	156	160	161	163	159	160	162	159	160	161	157	159	160	162	165	167	159	162	164	161	163	166	157	160	162
Food, beverages & tobacco	1422	1511	1528	1542	1502	1517	1534	1508	1523	1539	1496	1514	1527	1550	1608	1668	1517	1569	1624	1547	1597	1662	1508	1562	1626
Hides & fibres	272	264	276	289	263	275	288	264	276	289	263	275	288	253	280	313	251	277	309	253	280	313	251	277	309
Total	1694	1775	1804	1831	1765	1792	1822	1772	1799	1828	1759	1789	1815	1803	1888	1981	1768	1846	1933	1800	1877	1975	1759	1839	1935
Indices of Volume																									
Imports more competitive with U.K. agriculture	100	106	107	108	105	107	108	106	107	108	105	106	107	107	111	116	104	108	112	106	110	116	103	108	113
Imports of food, beverages and tobacco	100	106	107	108	106	107	108	106	107	108	105	106	107	109	113	117	107	110	114	109	112	117	106	110	114
Imports of agricultural products	100	105	106	108	104	106	107	105	106	108	104	106	107	106	111	117	104	109	114	106	111	117	104	109	114
Forecasts of official index of volume of food, beverages & tobacco (based on 1954)	113	121	123	124	121	122	123	121	122	123	120	122	122	125	129	134	122	126	131	124	128	133	121	126	130
Index of output of U.K. agriculture & fisheries, excluding feed and store cattle	100	117	118	120	117	118	118	116	116	117	115	116	116	132	133	135	131	133	134	130	132	134	130	132	133
Total value of* food at farm-import level (excluding subsidy)	100	111	112	113	111	112	112	111	111	112	110	111	111	118	121	124	117	119	122	118	120	124	116	119	122

* Including fish, tobacco, drink and some industrial uses of foodstuffs and fats: excluding non-commercial supplies.

TABLE 49(B). Forecaets of real cost ef importe of agricultural producte.

£m.	Cost in 1955-9	Forecasts for 1965												Forecasts for 1975											
		Low Feed Prices						High Feed Pricee						Lew Feed Prices						High Feed Prices					
		A			B			A			B			A			B			A			B		
		a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	o
Meat, cattle, fish, egge	361	368	374	379	366	371	376	387	392	397	384	389	391	385	401	419	373	389	406	402	420	438	391	407	426
Milk products	147	133	136	138	130	133	136	148	151	155	145	148	151	132	141	151	124	133	142	145	155	165	135	145	155
Fruit	124	143	148	153	143	147	151	145	150	154	144	148	152	160	177	197	157	172	192	161	178	198	158	174	193
Vegetablee	66	71	72	73	70	71	72	71	72	73	70	71	72	73	78	83	71	75	80	73	78	83	71	76	81
Grain (grose imports)	220	200	203	205	199	201	203	212	215	217	210	213	215	172	178	185	166	172	179	177	183	191	169	176	184
Total of above items	918	915	933	948	908	923	938	963	980	996	953	969	981	922	975	1035	891	941	999	958	1014	1075	924	978	1039
Oils, fate, oilseed, oiloake	156	150	151	152	148	150	151	158	159	160	156	158	159	148	151	154	145	148	150	157	160	162	154	156	159
Sugar, beverages, tobacco	348	378	380	385	375	378	380	379	381	384	376	379	381	409	421	433	402	412	430	410	422	434	403	413	430
Total food, drink & tobacco	1422	1443	1464	1485	1431	1451	1469	1500	1520	1540	1485	1506	1521	1479	1547	1622	1438	1501	1579	1525	1596	1671	1481	1547	1628
Hides and fibres	272	257	268	281	256	267	280	257	268	281	256	267	280	243	269	300	241	266	236	243	269	300	241	266	296
Total	1694	1700	1732	1766	1687	1718	1749	1757	1788	1821	1741	1773	1801	1722	1816	1922	1679	1767	1875	1768	1865	1971	1722	1813	1924
Indices of real cost																									
Items more competitive with U.K. agriculture	100	100	102	103	99	101	102	105	107	108	104	106	107	100	106	113	97	102	109	104	110	117	101	107	113
Food, drink & tobacco	100	101	103	104	101	102	103	105	107	108	104	106	107	104	109	114	101	106	111	107	112	118	104	109	114
Total	100	100	102	104	100	101	103	104	105	107	103	105	106	102	107	113	99	104	111	104	110	116	102	107	114
Real cost of food, drink & tobacco; official index of gross imports + retail price index (base 1954)	100	102	104	105	102	103	104	106	108	109	105	107	108	105	110	115	102	107	112	108	113	119	105	110	115

TABLE 50. Forecasts of supplies of meat, fish and eggs

		Quantity 1955-9 000 tons	1965 A_1			1965 B_1			1965 A_2			1965 B_2			1975 A_1			1975 B_1			1975 A_2			1975 B_2		
			a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Beef:	Home	773	909	910	912	905	908	909	895	897	899	892	894	897	932	939	944	925	931	937	918	923	929	910	916	921
	Imported	389	367	371	374	365	368	372	330	384	387	379	382	385	380	393	406	369	381	395	394	407	421	383	395	409
	Total	1162	1276	1281	1286	1270	1276	1281	1275	1281	1286	1271	1276	1282	1312	1332	1350	1294	1312	1332	1312	1330	1350	1293	1311	1330
Mutton:	Home	201	233	234	235	233	234	235	240	241	242	240	241	241	256	259	264	254	258	262	261	267	271	262	265	270
	Imported	343	362	365	369	361	364	366	370	373	376	368	371	374	397	409	422	390	401	414	405	417	430	398	409	422
	Total	544	595	599	604	594	598	601	610	614	618	608	612	615	653	668	686	644	659	676	666	684	701	660	674	692
Pork:	Home	391	421	428	432	420	425	430	401	406	410	399	404	409	437	455	472	429	447	465	416	433	451	409	425	443
	Imported	23	30	30	30	30	30	30	30	30	30	30	30	30	40	40	40	40	40	40	40	40	40	40	40	40
	Total	414	451	458	462	450	455	460	431	436	440	429	434	439	477	495	512	469	487	505	456	473	491	449	465	483
Bacon & Ham:	Home	220	235	235	236	235	235	236	227	228	229	227	228	229	257	258	262	257	258	261	247	249	252	246	249	252
	Imported	329	348	353	357	346	351	355	351	356	360	349	354	358	345	362	379	336	352	370	350	367	385	342	357	375
	Total	549	583	588	593	581	586	591	578	584	589	576	582	587	602	620	641	593	610	631	597	616	637	588	606	627
All Pigmeat		943	1034	1046	1055	1031	1041	1051	1009	1020	1029	1005	1016	1026	1079	1115	1153	1062	1097	1136	1053	1089	1128	1037	1071	1110
Imported canned meat		192	197	199	200	197	198	199	202	203	204	201	202	203	214	217	222	209	213	217	218	221	226	213	217	221
Poultry:	Home	184	374	384	393	376	385	395	324	334	343	326	335	345	457	491	527	457	490	525	407	441	477	407	440	475
	Imported	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Total	194	384	394	403	386	395	405	334	344	353	336	345	355	467	501	537	467	500	535	417	451	487	417	450	485
Offal:	Home	134	153	154	154	152	153	154	150	151	151	149	150	151	160	162	165	159	161	164	157	159	162	155	158	160
	Imported	66	68	68	69	67	68	69	69	70	70	69	69	70	71	73	76	69	72	74	73	75	78	71	73	76
	Total	200	221	222	223	219	221	223	219	221	221	218	219	221	231	235	241	228	233	238	230	234	240	226	231	236
All Meat:	Home	1903	2325	2345	2362	2321	2340	2359	2237	2257	2274	2233	2252	2272	2499	2564	2634	2481	2545	2614	2406	2472	2542	2389	2453	2521
	Imported	1352	1382	1396	1409	1376	1389	1401	1412	1426	1437	1406	1418	1430	1457	1504	1555	1423	1469	1520	1490	1537	1590	1457	1501	1553
	Total	3255	3707	3741	3771	3697	3729	3760	3649	3683	3711	3639	3670	3702	3956	4068	4189	3904	4014	4134	3896	4009	4132	3846	3954	4074
Fish for uee in U.K.:																										
British landings		396*	370	372	374	369	371	373	379	382	383	378	380	382	366	374	381	362	369	377	375	383	391	371	378	387
Imported fish:		111*	124	124	126	123	124	125	128	128	129	127	128	129	140	144	147	137	141	144	144	148	150	141	145	148
Foreign landinge		58	59	59	60	59	59	59	61	61	62	61	61	61	69	70	71	67	68	69	71	72	73	69	70	71
Canned fish (net imports)		53**	65	65	66	64	65	66	67	67	68	66	67	68	71	74	76	70	73	75	73	76	78	72	75	77
Eggs																										
Home supply		948‡	1124	1132	1140	1118	1126	1135	1098	1106	1116	1093	1101	1110	1245	1275	1308	1223	1253	1284	1217	1247	1279	1196	1224	1257
Imports :	shell	32+	17	18	19	16	17	18	22	23	23	21	22	23	8	12	16	6	9	13	15	19	23	13	17	20
	liquid	32																								
	Total	1012	1141	1150	1159	1134	1143	1153	1120	1129	1139	1114	1123	1133	1253	1287	1324	1229	1262	1297	1232	1266	1302	1209	1241	1277

* Filleted weight. ** Exports of canned fish are expected to continue at 7 thousand tons. ‡Million dozen. +In shell egg equivalent.

TABLE 51. Supplies of milk and milk products and consumption of fats.

		m. galo. 1955-59	1965 A_1 a	1965 A_1 b	1965 A_1 c	1965 B_1 a	1965 B_1 b	1965 B_1 c	1965 A_2 a	1965 A_2 b	1965 A_2 c	1965 B_2 a	1965 B_2 b	1965 B_2 c	1975 A_1 a	1975 A_1 b	1975 A_1 c	1975 B_1 a	1975 B_1 b	1975 B_1 c	1975 A_2 a	1975 A_2 b	1975 A_2 c	1975 B_2 a	1975 B_2 b	1975 B_2 c
Liquid milk sales		1519	1621	1628	1636	1602	1909	1617	1621	1628	1636	1602	1609	1617	1721	1749	1776	1673	1698	1726	1721	1749	1776	1673	1698	1726
Milk as cheese	H	213	288	283	280	290	284	282	237	230	225	240	238	233	350	339	329	361	343	342	303	292	283	328	305	295
	I	285	246	253	259	240	248	253	294	304	312	288	293	301	222	244	267	199	227	241	268	290	312	231	265	287
Total cheese		498	534	536	539	530	532	535	531	534	537	528	531	534	572	583	596	560	570	583	571	582	595	559	570	582
Milk as butter	H	132	324	316	310	336	329	317	201	190	177	216	203	191	433	407	381	465	445	416	323	297	270	354	331	304
	I	2019	1976	2002	2021	1959	1981	2007	2071	2099	2123	2052	2078	2103	2001	2084	2170	1934	2008	2098	2089	2172	2259	2024	2101	2188
Total butter		2151	2300	2318	2331	2295	2310	2324	2272	2289	2300	2268	2281	2294	2434	2491	2551	2399	2453	2514	2412	2469	2529	2378	2432	2492
Other milk products	H	232	293	297	300	291	294	297	293	297	300	291	294	297	323	335	348	315	326	339	323	335	348	315	326	339
	I	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total milk products		263	293	297	300	291	294	297	293	297	300	291	294	297	323	335	348	315	326	339	323	335	348	315	326	339
Home produced milk		2096	2526	2524	2526	2519	2516	2513	2352	2345	2338	2349	2344	2338	2827	2830	2834	2814	2812	2823	2670	2673	2677	2670	2660	2664
Imported butter & cheese as milk		2335	2222	2255	2280	2199	2229	2260	2365	2403	2435	2340	2371	2404	2223	2328	2437	2133	2235	2339	2357	2462	2571	2255	2366	2475
Total		4431	4748	4779	4806	4718	4745	4773	4717	4748	4773	4689	4715	4742	5050	5158	5271	4947	5047	5162	5027	5135	5248	4925	5026	5139
		000 tons																								
Cheese	H	92	125	123	122	126	123	123	103	100	98	104	103	101	152	147	143	157	149	149	132	127	123	143	133	128
	I	124	107	110	112	104	108	110	128	132	135	126	128	131	97	106	116	86	99	104	116	126	136	100	115	125
Total		216	232	233	234	230	231	233	231	232	233	230	231	232	249	253	259	243	248	253	248	253	259	243	248	253
Butter	H	24	59	57	56	61	60	58	37	35	32	39	37	35	79	74	69	85	81	76	59	54	49	64	60	55
	I	367	359	364	368	356	360	365	376	381	386	373	378	382	364	379	395	351	365	381	380	395	411	368	382	398
Total		391	418	421	424	417	420	423	413	416	418	412	415	417	443	453	464	436	446	457	439	449	460	432	442	453
Margarine		367	366	363	360	360	357	354	371	368	366	365	362	360	366	353	339	350	337	323	370	357	343	354	341	327
Lard & compound fat		247	248	247	246	245	244	243	248	247	246	245	244	243	249	243	237	241	235	229	249	243	237	241	235	229
Other fats		238	253	254	256	251	253	254	253	254	256	251	253	254	268	272	276	261	265	269	268	272	276	261	265	269
All fats		1243	1285	1285	1286	1273	1274	1274	1285	1285	1286	1273	1274	1274	1326	1321	1316	1288	1283	1278	1326	1321	1316	1288	1283	1278

Table 52. Imports of citrus and other fruits, dried fruits and nuts

	1955/59	1965 A_1			1965 B_1			1975 A_1			1975 B_1		
		a	b	c	a	b	c	a	b	c	a	b	c
						000 tons							
Fresh fruit													
Oranges	364	444	450	454	444	449	454	482	508	537	475	499	529
Grapefruit	47	50	51	52	50	51	52	59	61	64	58	61	64
Lemons, limes, etc.	31	28	28	28	28	28	28	29	30	31	28	29	30
Total citrus	442	522	529	534	522	528	534	570	599	632	561	589	623
Bananas	314	351	356	361	349	356	363	400	422	447	395	417	443
Apples and pears	238	224	230	236	224	229	235	244	267	291	238	260	285
Other fresh fruit	91	97	99	101	97	98	99	107	113	121	106	112	119
Total fresh fruit	1085	1194	1214	1232	1192	1211	1231	1321	1401	1491	1300	1378	1470
Fruit juices	201	273	280	286	271	279	286	332	359	388	328	354	384
Citrus	161	218	224	229	219	223	229	266	287	310	262	283	307
Non-citrus	40	55	56	57	54	56	57	66	72	78	66	71	77
Canned fruit	196	263	268	275	260	265	268	292	316	340	289	310	333
Citrus	31	45	46	47	44	45	46	58	63	68	58	62	67
Non-citrus	165	218	222	228	216	220	222	234	253	272	231	248	266
Fruit pulp, etc.	65	81	82	83	80	82	84	88	91	96	87	91	95
Citrus in all forms	634	785	799	810	783	796	809	894	949	1010	881	934	997
Other fruit in all forms	913	1026	1045	1066	1020	1041	1060	1139	1218	1305	1123	1199	1285
Nuts	65	73	74	74	72	73	74	80	84	88	79	82	86
Dried fruit	145	155	156	157	154	155	156	166	170	174	163	166	170
Vine fruit	109	115	116	116	114	115	116	120	122	125	117	120	122
Other	36	40	40	41	40	40	40	46	48	49	46	46	48

Note: Forecasts are all for Low Feed Price assumption; estimates with high feed prices are expected to be up by ½% approx.

Table 53. Forecast output of fruit from U.K. farms and of free supplies

	1955-59	1965 A_1			1965 B_1			1975 A_1			1975 B_1		
		a	b	c	a	b	c	a	b	c	a	b	c
						000 tons							
Dessert apples	206	275	276	278	275	276	277	327	332	337	328	331	336
Cooking apples	253	239	239	239	238	239	239	274	278	282	273	277	282
Cider apples and perry pears	65	68	68	68	68	68	68	82	82	82	82	82	82
Other pears	54	97	97	98	97	97	98	114	118	123	113	118	123
Plums	82	72	72	72	72	72	72	78	80	82	78	79	81
Cherries	21	25	25	25	25	25	25	29	30	31	29	30	31
Other orchard fruit	3	3	3	3	3	3	3	3	3	3	3	3	3
Soft fruit	84	97	99	101	98	99	100	111	115	120	110	114	119
Total	768	876	879	884	876	879	882	1018	1038	1060	1014	1034	1057
Nuts	5	5	5	5	5	5	5	5	5	5	5	5	5
Free supplies of fruit estimated	122	98	98	98	98	98	98	74	74	74	74	74	74
of which													
Soft fruit	28	22	22	22	22	22	22	17	17	17	17	17	17
Apples and pears	56	45	45	45	45	45	45	34	34	34	34	34	34
Other	38	30	30	30	30	30	30	23	23	23	23	23	23
Estimated total production of fruit and nuts, including free supplies	895	979	982	987	979	982	985	1097	1117	1139	1093	1113	1136

Table 54. Vegetable Supply from various sources in thousands of tons (home produced commercial supplies)

		1965 A_1			1965 B_1			1975 A_1			1975 B_1		
	1955-9	a	b	c	a	b	c	a	b	c	a	b	c
Potatoes for food off farms	4276	4152	4155	4159	4109	4113	4116	3881	3874	3865	3775	3769	3760
Dried peas for food	43	17	17	17	17	17	17	17	17	17	17	17	17
Tomatoes	100	95	96	98	95	96	97	102	107	112	101	106	111
Other vegetables	2032	2221	2232	2243	2211	2221	2231	2400	2441	2488	2370	2410	2458
of which:													
Greens and Broccoli	874	957	962	967	951	956	961	1050	1069	1092	1037	1053	1075
Legumes:	226	247	248	249	246	248	249	272	277	282	270	276	282
Broad beans	24.4	30.2	30.3	30.4	30.0	30.1	30.2	35.2	35.8	36.4	34.7	35.4	36.1
Runner beans	42.7	48.5	48.6	48.7	48.3	48.9	49.0	54.5	55.1	55.7	54.4	55.2	55.9
Peas for market	85.3	66.0	66.1	66.2	65.8	65.9	66.0	69.0	69.6	70.2	68.5	69.2	70.0
Peas for canning	42.6	50.0	50.1	50.2	49.8	50.4	50.5	53.0	53.6	54.3	53.0	53.6	54.2
Peas for freezing	31.8	52.3	52.9	53.5	52.1	52.7	53.3	60.3	62.9	65.4	59.4	62.6	65.8
Roots, onions, leeks and celery	666	698	700	702	696	697	698	734	740	747	723	729	736
Salad and other vegetables	266	319	322	325	318	320	323	344	355	367	340	352	365
Imported supply of:													
Potatoes for food	495	500	500	500	500	500	500	500	500	500	500	500	500
Dried peas for food	161	151	149	148	147	146	144	98	88	81	91	81	72
Tomatoes (including canned)	364	416	422	428	414	420	425	463	486	512	455	477	502
Other vegetables:	328	339	342	346	335	339	342	372	387	403	359	373	389
Onions and roots	246	249	250	252	247	249	250	259	260	261	247	248	249
Salad and other vegetables	82	90	92	94	88	90	92	113	127	142	112	125	140
Free Supply: Potatoes	549	439	439	439	439	439	439	329	329	329	329	329	329
Tomatoes	13	10	10	10	10	10	10	7	7	7	7	7	7
Greens	155	124	124	124	124	124	124	93	93	93	93	93	93
Legumes	108	86	86	86	86	86	86	65	65	65	65	65	65
Roots	83	66	66	66	66	66	66	50	50	50	50	50	50
Other vegetables	51	41	41	41	41	41	41	31	31	31	31	31	31
Total home supply	6451	6485	6500	6517	6432	6447	6461	6400	6439	6482	6263	6302	6346
Imports	1348	1406	1413	1422	1396	1405	1411	1433	1461	1496	1405	1431	1463
Free supply	959	766	766	766	766	766	766	575	575	575	575	575	575
Total supplies	8758	8657	8679	8705	8594	8618	8638	8408	8475	8553	8243	8308	8384

Table 55. Consumption of beverages, sugar, tobacco and spices

	1955-9		1965						1975					
			A			B			A			B		
			a	b	c	a	b	c	a	b	c	a	b	c
Tea	224	000 tons	232	232	232	230	230	230	241	241	241	235	235	235
Coffee	36	"	44	44	45	43	44	44	52	54	57	51	53	56
Cocoa powder	32	"	35	35	35	34	35	35	37	38	39	36	37	38
Cocoa butter (estimated)	54	"	61	62	63	61	62	63	68	71	75	67	70	73
Equivalent imports														
Cocoa beans	93	"	102	102	102	99	102	102	107	110	113	104	107	110
Cocoa butter	17	"	21	22	23	22	22	23	25	27	30	25	27	29
Sugar (in all forms)	2727	"	2832	2834	2836	2805	2807	2809	2938	2934	2929	2836	2853	2848
U.K. production from beet	662	"	688	688	688	688	688	688	721	721	721	721	721	721
Sugar in honey or glucose not derived from raw sugar[d]	93	"	100	100	100	100	100	100	100	100	100	100	100	100
Requirements of refined sugar from imported sugar[e]	1972	"	2044	2046	2048	2017	2019	2021	2117	2113	2108	2035	2032	2027
Spices	34	"	37	37	37	37	37	37	39	39	39	39	39	39
Tobacco consumption	243	mill.lb.	274	278	282	275	279	283	302	320	341	304	322	343
Beer consumption	25.3	mill.bulk barrels	27.7	27.9	28.0	27.8	28.0	28.2	30.0	30.8	31.6	30.3	31.0	31.9
Grain required for beer	593	000 tons	647	651	653	649	653	658	699	715	733	705	720	740
Consumption of potable spirits	12.7	mill.proof galls.	15.2	15.5	15.8	15.2	15.6	15.9	17.6	18.9	20.3	17.7	18.9	20.4
Production of potable spirits	54.2	"	68	69	70	68	69	70	81	83	85	80	82	84
Production from malt	18.4	"	30	31	32	30	31	32	37	38	39	36	37	38
Production from grain and malt	30.8	"	35	35	35	35	35	35	41	42	43	41	42	43
Exports of spirits	20.7	"	35	35	35	35	35	35	45	45	45	45	45	45
Barley required for distilling[f]	245	000 tons	329	338	348	329	338	348	406	417	428	395	406	417
Maize required for distilling[g]	140	"	197	197	197	197	197	197	236	242	248	230	236	242
Wine imports	15.7	mill. galls	19.9	20.5	21.1	20.1	20.6	21.2	24.0	26.4	29.0	24.3	26.6	29.3

Notes: d Subject to increase of 20 thousand tons with low grain prices

e Subject to fall of 20 thousand tons with low grain prices

f Subject to increase of 20 thousand tons with high grain prices

g Subject to decrease of 20 thousand tons with high grain prices

TABLE 56. Forecasts of supply of cereals, grain offals and molasses: and use for food or animal feed.

	Quantity 1955-9 m.of tons	With low feed prices 1965 A a	1965 A b	1965 A c	1965 B a	1965 B b	1965 B c	With high feed prices 1965 A a	1965 A b	1965 A c	1965 B a	1965 B b	1965 B c	With low feed prices 1975 A a	1975 A b	1975 A c	1975 B a	1975 B b	1975 B c	With high feed prices 1975 A a	1975 A b	1975 A c	1975 B a	1975 B b	1975 B c
Wheat for food	5.73																								
Of which imported wheat	4.04																								
Wheat equiv.of flour imports	.49	4.49	4.48	4.47	4.45	4.44	4.44	4.49	4.48	4.47	4.45	4.44	4.44	4.32	4.26	4.19	4.20	4.14	4.07	4.32	4.26	4.19	4.20	4.14	4.07
Home wheat milled	1.20	1.12	1.11	1.11	1.10	1.10	1.10	1.12	1.11	1.11	1.10	1.10	1.10	1.06	1.05	1.03	1.03	1.01	.99	1.06	1.05	1.03	1.03	1.01	.99
Imported wheat for feeding	.43	.40	.40	.40	.40	.40	.40	.20	.20	.20	.20	.20	.20	.30	.30	.30	.30	.30	.30	.20	.20	.20	.20	.20	.20
Home wheat for feeding	1.37	1.44	1.43	1.43	1.45	1.44	1.44	1.58	1.57	1.56	1.59	1.58	1.57	1.92	1.89	1.87	1.94	1.92	1.89	2.08	2.05	2.03	2.10	2.08	2.05
Total wheat required	7.53	7.45	7.42	7.41	7.40	7.38	7.38	7.39	7.36	7.34	7.34	7.32	7.31	7.60	7.50	7.39	7.47	7.37	7.25	7.66	7.56	7.45	7.53	7.43	7.31
Barley for food & drink	1.02	1.15	1.17	1.18	1.15	1.17	1.18	1.17	1.19	1.20	1.17	1.19	1.20	1.29	1.33	1.37	1.28	1.31	1.35	1.31	1.35	1.39	1.32	1.35	1.39
for beer	.57	.62	.63	.63	.62	.63	.63	.62	.63	.63	.62	.63	.63	.67	.69	.71	.68	.69	.71	.67	.69	.71	.68	.69	.71
for distilling	.25	.33	.34	.35	.33	.34	.35	.35	.36	.37	.35	.36	.37	.41	.42	.43	.40	.41	.42	.43	.44	.45	.44	.45	.46
for vinegar & other uses	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.21	.22	.23	.20	.21	.22	.21	.22	.23	.20	.21	.22
Exports of malting barley	.13	.13	.13	.13	.13	.13	.13	.11	.11	.11	.11	.11	.11	.10	.10	.10	.12	.12	.12	.08	.08	.08	.10	.10	.10
Imports for distilling	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04
Imports for feed	.94	.44	.44	.44	.44	.44	.44	.34	.34	.34	.34	.34	.34	.26	.26	.26	.26	.26	.26	.16	.16	.16	.16	.16	.16
Home barley for feed	1.77	2.78	2.76	2.75	2.76	2.75	2.74	2.96	2.95	2.94	2.95	2.94	2.93	4.03	4.01	3.95	4.02	4.00	3.98	4.24	4.22	4.16	4.24	4.22	4.19
Total barley required	3.73	4.37	4.37	4.37	4.35	4.36	4.36	4.47	4.48	4.48	4.46	4.47	4.47	5.58	5.60	5.58	5.56	5.57	5.59	5.71	5.73	5.71	5.72	5.73	5.74
Oats, rye & mixed corn																									
Home produced for feed	2.42	2.22	2.21	2.21	2.23	2.23	2.22	2.33	2.33	2.33	2.35	2.34	2.34	2.02	2.00	1.99	2.05	2.04	2.02	2.16	2.13	2.12	2.19	2.17	2.15
Home produced for food	.16	.15	.15	.15	.15	.15	.14	.15	.15	.15	.15	.15	.14	.14	.14	.13	.14	.13	.12	.14	.14	.13	.14	.13	.12
Rice imports for food & drink	.09	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07
Maize imports for feed	1.57	2.57	2.72	2.82	2.55	2.64	2.78	1.94	2.09	2.21	1.92	2.04	2.17	1.81	2.11	2.46	1.65	1.93	2.27	1.00	1.26	1.61	.82	1.08	1.43
for food and industry	.48	.63	.63	.63	.63	.63	.63	.58	.58	.58	.58	.58	.58	.65	.65	.65	.63	.63	.63	.60	.60	.60	.58	.58	.58
of which brewing & distilling	.16	.21	.21	.21	.21	.21	.21	.19	.19	.19	.19	.19	.19	.25	.26	.26	.25	.25	.26	.23	.24	.24	.23	.23	.24
starch and glucose	.23	.33	.33	.33	.33	.33	.33	.30	.30	.30	.30	.30	.30	.31	.31	.31	.30	.30	.30	.28	.28	.28	.27	.27	.27
food and other uses	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.08	.08	.08	.08	.07	.09	.08	.08	.08	.08	.07
Total maize required	2.05	3.20	3.35	3.45	3.18	3.27	3.41	2.52	2.67	2.79	2.50	2.62	2.75	2.46	2.76	3.11	2.28	2.56	2.90	1.60	1.86	2.21	1.40	1.66	2.01
Other imported grains & offals	1.07	1.23	1.23	1.23	1.23	1.23	1.23	1.13	1.13	1.13	1.13	1.13	1.13	.96	1.06	1.16	.96	1.06	1.16	.86	.96	1.06	.86	.96	1.06
Imports of molasses	.51	.49	.49	.49	.49	.49	.49	.51	.51	.51	.51	.51	.51	.66	.66	.66	.66	.66	.66	.73	.73	.73	.73	.73	.73
Imports of grain molasses and offals	9.68	10.39	10.53	10.62	10.33	10.41	10.55	9.33	9.47	9.58	9.27	9.38	9.51	9.07	9.41	9.79	8.78	9.09	9.46	7.93	8.28	8.66	7.66	7.96	8.34
Feed derived from these imports	5.4	6.2	6.3	6.4	6.1	6.2	6.4	5.2	5.3	5.4	5.1	5.2	5.4	4.9	5.3	5.8	4.8	5.1	5.5	3.8	4.2	4.7	3.7	4.0	4.5
Home production of concentrated animal feeds (excl. fishmeal & dried milk)	6.6	7.6	7.5	7.5	7.6	7.6	7.5	8.0	8.0	8.0	8.0	8.0	8.0	9.1	9.1	9.0	9.2	9.2	9.1	9.7	9.6	9.5	9.7	9.7	9.6
Home produced cereals for food and drink	2.45	2.49	2.50	2.50	2.48	2.49	2.49	2.49	2.50	2.50	2.48	2.49	2.49	2.55	2.58	2.62	2.52	2.55	2.59	2.55	2.58	2.62	2.52	2.55	2.59
Imported cereals for food, drink and industry	5.19	5.29	5.28	5.27	5.23	5.22	5.22	5.24	5.23	5.22	5.18	5.17	5.17	5.11	5.05	4.98	4.97	4.91	4.84	5.06	5.00	4.93	4.92	4.86	4.79

TABLE 57. Imports of oils, fats, oilseed and oilseed cake.

	1955-9	Low feed prices 1965						High feed prices 1965						Low feed prices 1975						High feed prices 1975					
		A			B			A			B			A			B			A			B		
	000 tons	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Imports of vegetable oils	336	269	282	294	264	276	288	273	286	299	268	280	292	281	297	315	264	281	301	284	300	318	260	277	311
Edible and for soap	250	215	214	213	210	208	207	219	218	217	214	212	211	236	228	219	219	212	205	239	231	222	215	208	215
Technical	86	54	68	81	54	68	81	54	68	81	54	68	81	45	69	96	45	69	96	45	69	96	45	69	96
Produced from imported oilseeds	410	346	346	346	346	346	346	346	346	346	346	346	346	306	306	306	306	306	306	306	306	306	306	306	306
Edible and for soap	361	268	268	268	268	268	268	268	268	268	268	268	268	218	218	218	218	218	218	218	218	218	218	218	218
Technical	49	78	78	78	78	78	78	78	78	78	78	78	78	88	88	83	88	88	88	88	88	88	88	88	88
Total vegetable oil supply	746	615	628	640	610	622	634	619	632	644	614	626	638	587	603	621	571	587	607	590	606	624	566	583	617
Imports of marine oils	125	130	129	128	128	127	126	131	130	129	129	128	127	133	128	123	128	123	117	134	129	124	129	124	118
Imports of animal fats & lard	175	275	274	273	273	272	271	275	274	273	273	272	271	285	279	273	278	272	266	285	279	273	278	272	266
Total imports of oils & fats	636	674	685	695	665	675	685	679	690	700	670	680	690	699	704	711	670	676	684	703	708	715	674	680	688
Imports of oilseeds	1060	981	981	981	981	981	981	981	981	981	981	981	981	917	917	917	917	917	917	917	917	917	917	917	917
Cake produced for feed	615	625	625	625	625	625	625	625	625	625	625	625	625	600	600	600	600	600	600	600	600	600	600	600	600
Oilseed cake & meal imported	1080	1210	1220	1230	1210	1220	1220	1160	1160	1170	1140	1160	1160	1320	1340	1370	1310	1330	1350	1250	1280	1300	1240	1260	1290
Fishmeal imported	169	228	233	238	227	232	236	220	224	228	218	222	226	240	258	276	233	251	269	236	254	272	229	247	265
	£ mil.																								
Value of imports at current prices.																									
Edible oils	22.6	20.4	20.3	20.1	19.8	19.7	19.6	20.8	20.7	20.5	20.2	20.1	20.0	22.2	21.4	20.6	20.6	20.0	19.3	22.5	21.7	20.9	20.9	20.3	19.6
Technical oils	9.1	6.3	7.5	8.9	6.3	7.5	8.9	6.3	7.5	8.9	6.3	7.5	8.9	5.4	8.1	10.8	5.4	8.1	10.8	5.4	8.1	10.8	5.4	8.1	10.8
Marine oils	9.9	10.3	10.2	10.1	10.1	10.0	10.0	10.4	10.3	10.2	10.2	10.1	10.1	10.5	10.1	9.7	10.1	9.7	9.2	10.6	10.2	9.8	10.2	9.8	9.3
Animal fats & lard	17.5	22.7	22.6	22.5	22.5	22.4	22.3	22.7	22.6	22.5	22.5	22.4	22.3	22.5	22.0	21.5	22.0	21.5	21.0	22.5	22.0	21.5	22.0	21.5	21.0
Oilseeds	57.6	47.9	47.9	47.9	47.9	47.9	47.9	50.7	50.7	50.7	50.7	50.7	50.7	42.9	42.9	42.9	42.9	42.9	42.9	45.6	45.6	45.6	45.6	45.6	45.6
Oilcake & fishmeal	39.4	41.6	42.1	42.6	41.5	42.0	42.2	46.6	46.8	47.3	45.9	46.7	46.9	44.9	46.3	48.0	44.4	45.7	47.1	50.2	52.1	53.7	49.5	51.1	53.0
Total of above items	156.1	149.2	150.6	152.1	148.1	149.5	150.9	157.5	158.6	160.1	155.8	157.5	158.9	148.4	150.8	153.5	145.4	147.9	150.3	156.8	159.7	162.3	153.6	156.4	159.3
Value of imports at constant prices.																									
Edible oils		20.6	20.5	20.3	20.0	19.9	19.8	21.0	20.9	20.7	20.4	20.3	20.2	23.1	22.3	21.5	21.5	20.8	20.1	23.4	22.6	21.8	21.8	21.1	20.4
Technical oils		6.2	7.4	8.8	6.2	7.4	8.8	6.2	7.4	8.8	6.2	7.4	8.8	5.1	7.8	10.5	5.1	7.8	10.5	5.1	7.8	10.5	5.1	7.8	10.5
Marine oils		10.3	10.2	10.1	10.1	10.0	10.0	10.4	10.3	10.2	10.2	10.1	10.1	10.5	10.1	9.7	10.1	9.7	9.2	10.6	10.2	9.8	10.2	9.8	9.3
Animal fats & lard		26.4	26.3	26.2	26.2	26.1	26.0	26.4	26.3	26.2	26.2	26.1	26.0	27.9	27.3	26.6	27.2	26.6	25.9	27.9	27.3	26.6	27.2	26.6	25.9
Oilseeds		50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	50.2	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8	45.8
Oilcake & fishmeal		46.3	46.8	47.4	46.3	46.8	47.0	44.4	44.6	45.1	43.7	44.5	44.8	50.0	51.5	53.3	49.3	50.9	52.4	47.8	49.6	51.2	47.2	48.7	50.5
Total		160.0	161.4	163.0	159.0	160.4	161.8	158.6	159.7	161.2	156.9	158.6	160.1	162.4	164.8	167.4	159.0	161.6	163.9	160.6	163.3	165.7	157.3	159.8	162.4
Home produced high protein feeds.																									
Fishmeal	140	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
Dried skim milk	35	80	80	80	80	80	80	56	56	56	56	56	56	110	110	110	110	110	110	85	85	85	85	85	85
Pulses for feed	90	65	65	65	65	65	65	72	72	72	72	72	72	49	49	49	49	49	49	55	55	55	55	55	55
Use of home produced tallow for soap	67	92	92	92	92	92	92	92	92	92	92	92	92	97	97	97	97	97	97	97	97	97	97	97	97

Table 58. Forecasts of supplies of fibres and hides

	1955-9		Value in 1955-9 £ mill.	Forecasts for 1965						Forecasts for 1975					
					A			B			A			B	
				a	b	c	a	b	c	a	b	c	a	b	c
Raw Cotton															
Retained imports[d]	302	000 tons	81	277	291	306	275	289	304	249	282	321	247	278	316
Consumption within U.K. in cotton manufactures	294[e]	"		as for retained imports											
Wool															
Retained imports of raw wool as clean wool equivalent	416	mill. lb.	150	430	442	455	429	440	453	425	454	489	422	450	487
For consumption within U.K.	466[e]	"		478	491	506	477	489	504	472	504	546	468	500	541
For use in exports	197[e]	"		- - - - - -			207	- - - - - -		- - - - - -			207	- - - - - -	
Home production[f]	74	"		80	80	81	80	80	81	85	86	88	84	86	87
For use in U.K.	48	"		48	49	51	48	49	51	47	50	55	46	50	54
For export[f]	26	"	9	32	31	30	32	31	30	38	36	33	38	36	33
Jute															
Total imports of raw jute	138	000 tons	13.0	158	172	192	158	171	188	181	218	265	177	213	260
Imports of jute goods	61	"	7.3	- - - - - -			43	- - - - - -		- - - - - -			20	- - - - - -	
Hard hemps (imports)															
Manilla hemp	16	"	2.3	11	12	13	11	12	13	11	12	14	11	12	14
Sisal	72	"	5.2	85	89	95	84	89	95	96	111	127	95	109	126
Flax (imports)	32	"	5.8	- - - - - -			32	- - - - - -		- - - - - -			32	- - - - - -	
Hides and pelts (total supply)	160	"		153	163	173	153	163	173	157	167	177	157	167	177
Home production from:															
Cattle and calves[g]	80	"		91	91	91	91	91	91	94	94	94	94	94	94
Sheep and lambs	10	"		12	12	12	12	12	12	13	13	13	13	13	13
Imports (net):															
Cattle, buffalo, calf, etc.	50	"	10	30	40	50	30	40	50	30	40	50	30	40	50
Sheep and lambs	20	"	6[h]	- - - - - -			20	- - - - - -		- - - - - -			20	- - - - - -	
Leather imports	24	"	(22)	) a similar weight with some increase in value is expected for imports											
exports	9	"	(15)	) and exports of leather											
Value of net imports of hides and fibres			272	264	276	289	263	275	288	253	280	312	251	277	309[i]
(listed items only)				257	268	281	256	267	280	243	269	300	241	266	296[j]

Notes: d A fall in real price of 10 per cent. by 1965 and of 15 per cent. by 1975 is expected.

e 1956-8 C.E.C. estimates

f A rise of 2 is expected with high feed prices

g A decrease of 2 is expected with high feed prices

h Including the value of some skin wool

i At constant prices

j Allowing for fall in real price of cotton